WEEDS TREES and TURF

OCTOBER 1973

ASSOCIATIONS STIMULATE INDUSTRY

LIFELINES HIDDEN FROM VIEW

COMMON LABORER TO FOREMAN IN 3 MONTHS

IRRIGATION UNIVERSITY

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Bert Graves, shown below, said that. He's President of H. V. Carter, Inc. of Oakland, California. He's one of the many Jacobsen Distributors who all feel the very same way about service. Because we're independent businessmen, keeping you happy keeps us in business. So when you talk about service, we listen.

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For More Details Circle (102) on Reply Card

These two fine-leafed perennial ryegrasses were cut with the same mower. The one on the right shows the fibrous "paint brush" top which is characteristic of ryegrasses. Pennfine, on the left, took a smooth, even cut because it was bred for softer, easier to cut fibers.

Pennfine: the clean-cut perennial ryegrass.

All the new fine-leafed perennial ryegrasses are beautiful. Until the mower comes along. That's the moment of truth for ryegrass. And Pennfine is the fine-leafed perennial ryegrass bred specifically for mowability. You can see the clean-cut look of Pennfine in the photo above. You'll see it in your turf, too.

Pennfine vs. other fine-leafed ryegrasses

Developed and released by Pennsylvania State University, Pennfine is the best of the fine-leafed perennial ryegrasses. That's the finding of the trials at University Park, Pennsylvania. Among nine cultivars, Pennfine ranked first in texture, first in density, first in decumbency (low growth), first in tolerance to snowmold and leaf spot. And, of course, first in mowability.

Pennfine mows 'em down

The remarkable mowability of Pennfine — the result of breeding specifically for soft fibers — is demonstrated in the above photograph. It was also proven by the University Park trials. Over a five-year period, Pennfine averaged 8.3 (of a possible 10) in mowability. The next best score was 7.3, and the other cultivars rated considerably lower.

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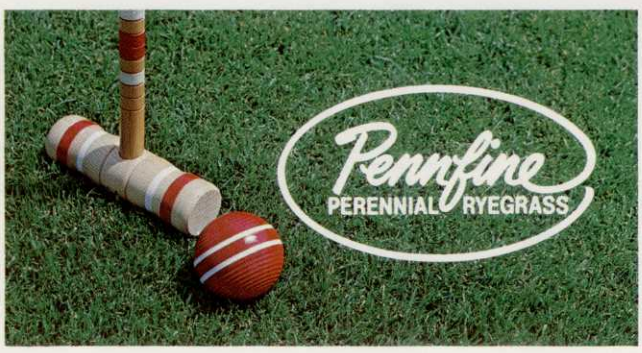

TO: **Pennfine Perennial Ryegrass**
P.O. Box 923, Minneapolis, Minnesota 55440

Please send me technical information on Pennfine Perennial Ryegrass. ☐ Names of Distributors. ☐

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Club or Company_____

Address_____

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WEEDS TREES and TURF®

Volume 12, No. 10 October, 1973

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"Serving The Green Industry"

What Do You Do With A Used Strip Mine? **10**

Strip mines have left ugly scars on the face of the countryside for many years. Now developers are turning these scarred areas into golf courses and recreational facilities.

Lifelines To Compsite Hidden From View **12**

How do you keep the natural look to campsites yet still provide the utilities? Missouri's Silver Dollar City buried the utility lines. Read how it was done with a R65 Ditch Witch trencher.

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A report of the International Pesticide Applicators Association annual meeting. Corporate secretary Lew Sefton of Lake Oswego, Oregon is the author.

From Common Laborer To Foreman In 3 Months **18**

Here's a report from a young man in the Green Industry who is expressing his appreciation fo rthe training he is receiveing. His expressing his appreciation for the training he is receiving. His Ohio State University through the Agricultural Technical Institute, Wooster, Ohio.

Agronomist Dr. Orvid Lee Talks Herbicides And Seed **22**

USDA agronomist Dr. Orvid Lee stationed at Oregon State University is considered an authority on the multi-million dollar seed industry. His work in developing new methods of weed control using activated charcoal and Karmex adds a new dimension to the weed science industry. Dr. Lee explains this technique and his relationship to the seed industry in this question and answer interview.

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A report on the International Shade Tree Conference which recently held its 49th annual meeting in Boston, Mass.

Irrigation University — Teaching Industry The Fundamentals **28**

Up to recently, the growing field of turfgrass irrigation has been stymied by lack of people who know enough about an underground automatic irrigation system. Industry, and more specifically the Toro Company, is doing something about this. Toro has developed an industry-wide irrigation school to teach and train men for this important field.

The Labor-Saving Plant Food **36**

Dr. Robert W. Schery, director, The Lawn Institute, reports on a small scale study of ureaform fertilizer and fast release fertilizer.

Tysons Corner Happening Draws 120,000 People **42**

It started out as an idea. But it grew into a "happening." Area firms surrounding metropolitan Washington D. C. brought their services to the people at a shopping mall on a recent Saturday. Result: keen interest and plans to repeat the performance at anoher mall.

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The Cover

Active association participation makes for a strong Green Industry. Our cover this month shows members of the International Shade Tree Conference enjoying fellowship at a barbeque during the 49th annual meeting. For a report on the meeting see page 25.

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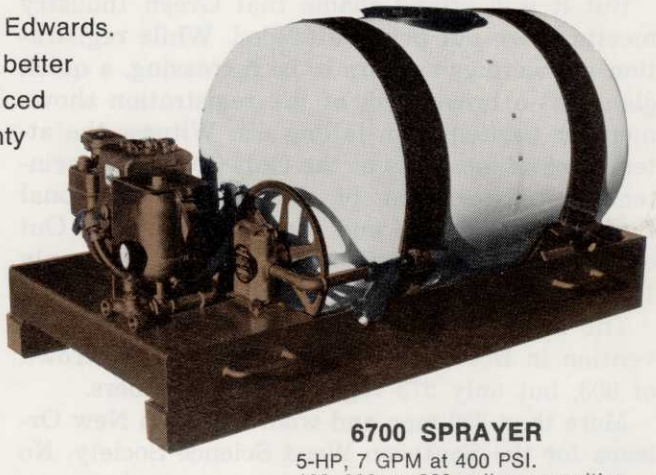

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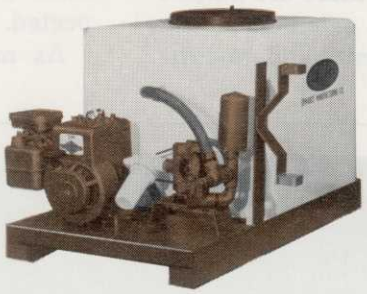

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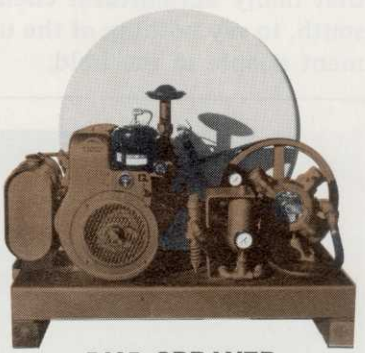

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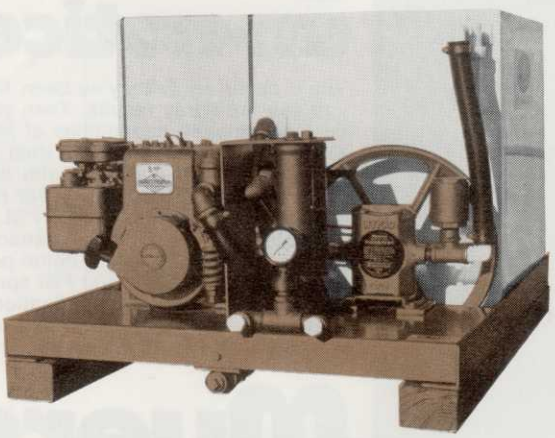

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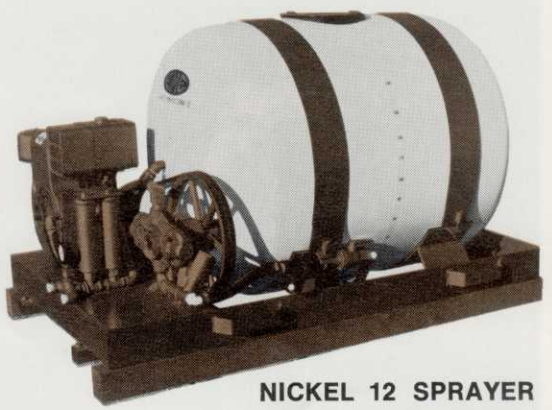

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Editorial

A Name Tag With No Name

We're winding up attending this year's meetings of national associations. They've been quite enlightening. Golf course superintendents, weed control specialists, tree care firms, sod producers and others have found common interests, common problems and common solutions through industry associations.

But it is a crying shame that Green Industry meetings are not better attended. While registration at meetings appears to be increasing, a quick glance at a breakdown of the registration shows member participation falling off. Witness the attendance of members at the Golf Course Superintendents Association of America international turfgrass conference and show, for example. Out of a total 4216 registrations for the meeting, only 1198 were actually members of the association.

The International Shade Tree Conference convention in Boston this year drew a record crowd of 903, but only 573 registered as members.

More than 800 men and women met in New Orleans for the Southern Weed Science Society. No one knows how many could have made the meeting, but it is safe to calculate that there are almost that many agricultural chemicals salemen in the south, to say nothing of the university and government people in the field.

The International Pesticide Applicators Association, the national group for contract applicators, met in Berkley, California for their national meeting in August. Only about 100 members attended the meeting. If you considered all the commercial applicators in California, as candidates for attendance, the registration could have been well over 1,000.

Other meetings and poor attendance records could be cited as the story is the same in nearly every national Green Industry association. Not one of these associations can boast an attendance figure at an annual meeting of greater than 40 percent. Where are the majority of the members? Where is the interest they once had when they joined the association? In short, who has dropped the ball?

We submit that fault doesn't lie solely in the camp of the association officials and convention planning committee. We've been to the meetings and seen the dedicated efforts and the excellent programs which these men and women have assembled. We've also seen the look on those people's faces when registration falls well below that expected.

As members of associations we have the re-

(continued on page 38)

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You'd never know they've been there. 'Til you see the spray results. Then you realize the performance capabilities of Myers TL10E2 Turf Sprayers. Plus their gentle nature. Standard equipped with dual "Pillows of Air" Terra Tires. For minimum ground compaction. Only 14.1 PSI. Standard 21' boom also. For turf maintenance in parks, golf courses, etc. Engine powered. Du-All 10 GPM, 20 to 500 PSI spray pump for full range chemical applications. Also available – skid model with live hose reel for insect, weed and sanitary operations.

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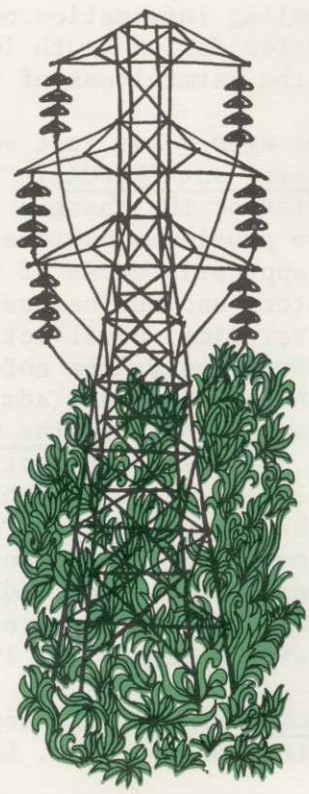
FOR INDUSTRY

FOR RAILROADS



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Government News / Business

Pyrethrins may no longer be classified as "non-toxic to pets and humans," says the Environmental Protection Agency. Under a regulation change, EPA has ruled that although pyrethrins are among the least toxic of insecticides on the market, they do have toxic effects on laboratory animals. The ruling was brought about through public hearing in early August. At that time about 30 comments were received by EPA. Manufacturers were opposed to the change. Public officials and consumer interest groups were in favor. Change is in force for anyone seeking a new registration. For manufacturers with products on the market, a deadline of Dec. 19 has been set to submit labeling information omitting the non-toxic claim. Overall action was brought to better define truth in labeling. EPA said that no new scientific data was submitted on the harmfulness of pyrethrins.

More on EPA....The agency has just set interim rules for civil violations of the 1972 Pesticide Control Act (FEPCA). The rules establish a mechanism for notifying an alleged violator of the charges against him and of the proposed amount of the penalty. They also provide violators the opportunity to request a hearing on the charges or on the appropriateness of the penalty. Maximum civil fine is $5,000 for commercial applicators and businesses. Private applicators are subject to a written warning the first time, civil action thereafter. Civil action represents a new lever for EPA. Previously, the enforcement program involved criminal actions. Actually, EPA now has both. Regional administrators will be responsible for bringing civil actions to bear. What are the rules? 1. An alleged violator has 20 days in which to respond to charges or request a hearing. Otherwise he will be considered as admitting to the charges and waiving his right to a hearing. 2. If a hearing is requested, it will be conducted by a Federal administrative law judge who will make an initial decision. The EPA regional administrator who initiated the action will issue a final order. An alleged violator can request another hearing or a reconsideration or he may appeal the case to the U. S. Court of Appeals. The interim rules became effective September 20, 1973.

Agrico Chemical Company, a subsidiary of The Williams Companies, Tulsa, Okla. has been purchased by Lebanon Chemical, Lebanon, Pa. for an undisclosed amount.

Questions on pesticides and the environment will be answered on October 24 in the first nationwide "Pesticide Dial-ogue." It's sponsored by the Council of Agricultural Science and Technology (CAST) through a grant from the National Agricultural Chemicals Association. Calls will be received from 10 a.m. to 4 p.m. Central Time. TOLL-FREE number for use anywhere in the continental U. S. except Illinois is 800-621-4232. In Illinois, dial 800-972-8309.

"All About OSHA" is a new booklet published by the Department of Labor. It satisfies the questions who, what, where, when, why and how about OSHA and summarizes the role of the various states in implementing the law. The back cover is an advertisement for the OSHA magazine, "Job Safety & Health." A one-year subscription is $4.50 payable to the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402. Expect delays up to six months or more before the magazine arrives. Order OSHA booklet from Department of Labor.

a name you can't forget

The first time a turf expert sees Fylking and he gently tests the turf, lifts a swatch and examines the root system, and closely scrutinizes the low-growing, 90-degree side angled leaves, please notice the subtle smile that crosses his face. This is the countenance of the wine connoisseur who has wet his lips with classic vintage, the man who recognizes the truly classic beauty of the Venus de Milo, the research agronomist who has spent years seeking the perfect turf and now views Fylking. Once he has, he wants to know more about this obviously elite Kentucky bluegrass. This man will appreciate knowing Fylking has received overall superior disease-resistance ratings from every major university and institution where tested for leaf spot, stripe smut, stem rust and leaf rust. When he examines the technical brochure he will smile again. Fylking is not perfect, but it's the closest of any. Fylking. It's a name you can't forget.

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For More Details Circle (110) on Reply Card

Developers of Wee-Ma-Tuk first saw the area (above left) as an abandoned strip mine. That was in 1957. Today it is a course characterized by lush rolling fairways and surrounded by homes (above right). Larry Brickel, course superintendent (inset) has made plans for a new tee for the 4th hole.

What Do You Do With A Used Strip Mine?

A STRIP MINE five miles north of Cuba, Illinois, served as evidence of the ugly scars our demand for natural resources can leave on the countryside when it was abandoned in 1957. Today, this same strip mine serves as evidence that man can live in harmony with nature.

In fact, the owners of Wee-Ma-Tuk Hills Golf Club and Development have made an all out effort to give nature a helping hand whenever possible.

To begin with, Wee-Ma-Tuk displays an eighteen hole golf course carefully sculptured between abandoned strip mine pits. The golf course alone makes it difficult to tell this was ever an eyesore. However, a conscientious conservation program which includes stocking the area with quail, pheasant and chukars, has further transformed Wee-Ma-Tuk into a pleasant retreat.

The progressive thinking that brought Wee-Ma-Tuk into being must be attributed to the men who invested their time and resources into its development. These men are currently officers in the Wee-Ma-Tuk Hill Corporation. However, credit for the beauty and condition of the golf course goes to Larry Brickel, course superintendent. Larry came to Wee-Ma-Tuk in February of this year and with him he brought not only his professional abilities as a golf course superintendent, but also a willingness to face a challenge.

One objective Larry has set for himself is to make an already attractive course even better. The varied terrain in and around the mine pits offers interesting possibilities.

"I'd like to use the surrounding contours to make the course even more aesthetic as well as challenging," relates Larry. "My present plans are to change number four fairway and put the tee up on a hill left from mine excavations. The hill is about 30 feet high and this would give our golfers an excellent chance to take a breather and view most of the course."

A "Brickel tour" around the course is all you need to see why this 26-year

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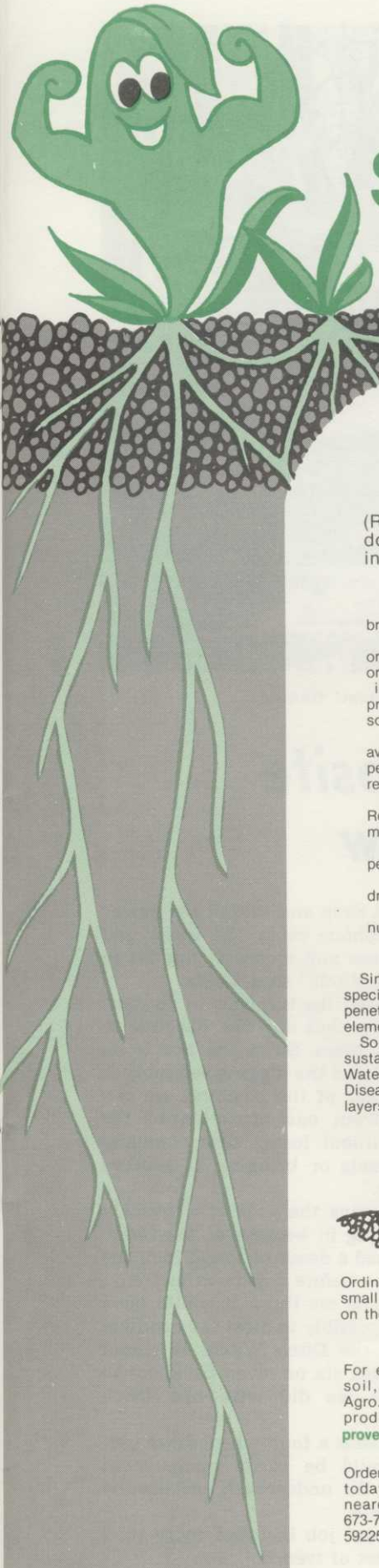

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(Releases the pressure of compacted, tight soils so as to allow roots to grow down deeper. Soil Rebuilder encourages grass to grow in thick and natural into bare and thin areas.) HELPS TO DEVELOP DEEP STRONG ROOTS.

In this age of ecology, Agro.Chem's organic Soil Rebuilder has been created to let nature itself breathe life into the earth.

Soil Rebuilder is a natural organic combination of plant by-products, decomposition by-products, organic extracts, bacterial by-products, and many organic complexes found in highly productive organic soils.

incubated for 7½ weeks under stringent conditions, Soil Rebuilder is guaranteed to be a pure, productive product. When applied by sprayer, Soil Rebuilder loosens tight, compacted soils, coats soil particles with organic matter and helps develop productive soil aggregates.

At work, Soil Rebuilder increases organic matter, bacteria, bacterial decomposition and the availability of plant food and micro nutrients. Recharging the soil with life by increasing the penetration of air, water and nutrients deep within the soil, Soil Rebuilder helps Mother Nature rebuild her soil naturally.

All of these reactions help develop a Deep Root System by making fertilizer work better. Soil Rebuilder lessens the need for extensive watering, fertilizing and weed control, thereby reducing maintenance costs.

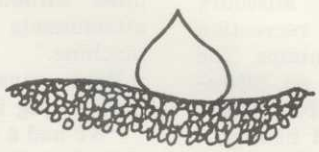
Soil Rebuilder is non-toxic and completely safe to use on all soils. It is harmless to humans, pets and wildlife, too.

For improved productivity, try Agro.Chem's Soil Rebuilder. No other product can produce such dramatic, natural results because no other product is produced in such a natural manner.

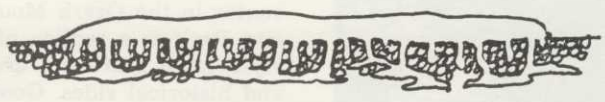
Try this on your ground this year. Notice the improved results within a few weeks—water and nutrients penetrate and help fertilizer work better.

Since plant roots only absorb liquid materials, Soil Rebuilder was created to make water react in a special way. Agro.Chem calls this special water FLAT WATER. FLAT WATER is an active, live water that penetrates and recharges the soil with life-producing Fertilizer nutrients, Liquid nutrients, Air, Trace elements.

Soil Rebuilder draws these vital elements deep into the soil and root system. Bacterial action is sustained and plant nutrients are made available to build soil aggregates and improve soil texture. Result: Water, air and fertilizer penetrate faster and make soil more productive, roots are deeper and stronger. Disease and insect infestation are reduced drastically because moisture retention in the Matt and Thatch layers is reduced. Plants grow thicker, are more healthy and beautiful.



Ordinary water cannot seep into small soil openings. It just stays on the surface and evaporates.



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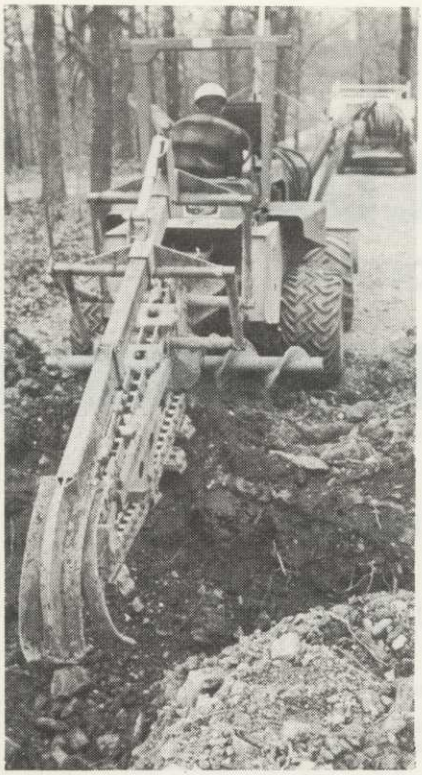
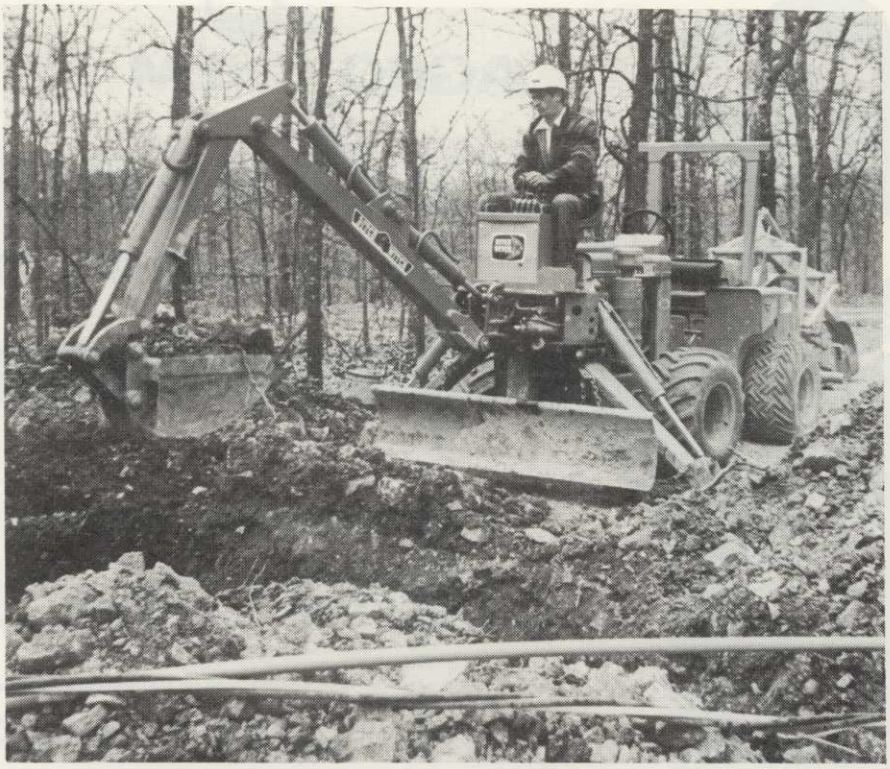
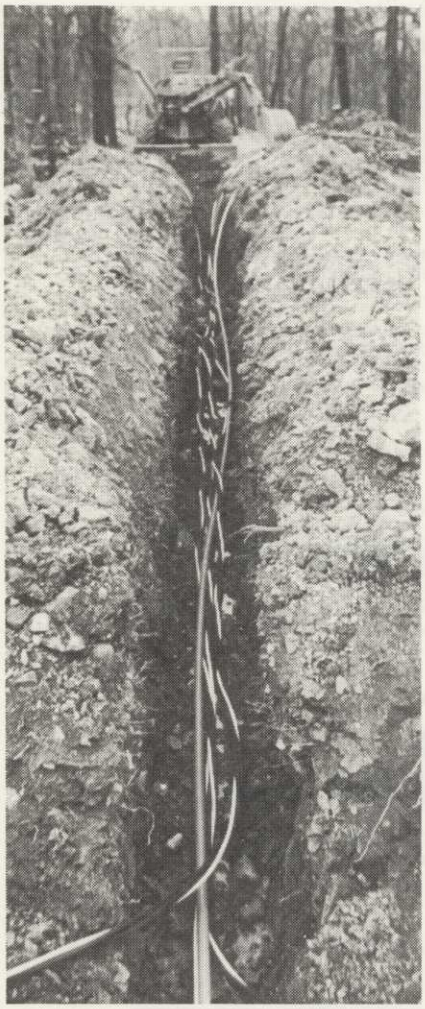


Trench width was 12 inches wide. Depth was four feet.



The front-mounted utility backhoe was used to intersect trenches.



All the services were buried in the same trench.

Lifelines To Campsite Hidden From View

OZARK MOUNTAIN campsites with all the conveniences of home — that's what Missouri's Silver Dollar City offered this season.

About 160 campsites were ready for the 1973 season and they featured electricity, water and sewer ready to be connected to the camper's trailer. Some even have a connection to hook up to telephone service.

Located in Southwest Missouri, Silver Dollar City is a recreation center in the Ozark Mountains. The city itself is a replica of an 1880's-style town featuring crafts, shows, and historical rides. Good fishing is nearby at Table Rock Lake.

One of the important considerations in building the new campsites was the preserve the natural beauty of the rugged, wooded area. So all utility service lines to the sites were buried. Silver Dollar City workmen accomplished most of the work themselves. However, trenching for the buried lines was contracted to Southwest Cable Plow Co.

Darrel Rantz, who operates Southwest Cable, used a diesel-powered R65 Ditch Witch trencher, equipped with a front-mounted utility backhoe, for most of the digging.

"We dug trench 12 inches wide, four feet deep and buried the power and telephone cable, the water and sewer lines and a control line all in the same ditch," says Rantz.

"We used the trencher to do most of the trenches and the backhoe to intersect them. Since the hoe is on the front and the digging assembly is on the rear of the machine, we can switch from one operation to the other without losing time changing attachments or bringing in another machine."

Rantz says the area is extremely hard to dig in because of the rocks.

"We had a deadline to get 75 of the sites done before a convention", says Darrel, and we think it would have been impossibly to meet the deadline without the Ditch Witch. It would have taken six or seven backhoes to do what we did with one Ditch Witch."

The R65 is a four-wheel drive unit so it could be easily maneuvered through the underbrush and around the job site.

The total job included more than 20,000 feet of trench.

A Silver Dollar City spokesman says that another 100 similar campsites are projected for future construction.□

delivers more than dirt

Dependability—You get it in critical spots like a cast-steel front axle, a cast-steel head on the dipperstick connection, a box-type loader mast with heavy pin supports. Two strong crossbars connect the loader booms. The bucket is topped with a double-thick spill sheet. Planetary final drives and sealed wet-disk power brakes are standard.

Production—Plenty of it is yours with more than 5 tons of backhoe digging force and a ¾-cubic-yard loader—on a maneuverable 77-inch wheelbase. Backhoe trenching capacity is 15 feet 1 inch, and there's 17 feet of ground level reach for fewer tractor moves.

Operating Ease—As standard equipment, you get 2-lever backhoe control, single-lever operation of loader bucket and lift arms, power steering, turn-around seat, hydraulic direction reverser and a flat open deck with sloping hoodline for full visibility.
For more JD310 facts and helpful finance information, see your dealer, listed in the Yellow Pages.
John Deere, Moline, Illinois.

JOHN DEERE

Bulldozers and Earthmoving Equipment

For More Details Circle (103) on Reply Card

Commercial Pesticide Applicators On The Move

By LEW SEFTON
Corporate Secretary
International Pesticide Applicators Assoc.

THE 1973 annual convention of the International Pesticide Applicators Association was held in mid-August at the Marriott Inn, Berkley, Calif.

Host for the meeting which attracted over 100 commercial applicators from many states was the California Chapter of IPAA. Their arrangements for speakers, registration, accommodations and other delegate needs will be an incentive toward excellence for all future hosts.

A highlight for all was the tour of spray companies in the Bay area. It permitted members to view first-hand situations which confront other commercial applicators. This year's tour included three California operators.

Of particular interest to those from the Pacific Northwest was the size and compactness of equipment. While the northern chapter members of IPAA generally emphasize bigger and bigger spray pumps, tanks, and other accessories, those applicators in the Bay area use smaller units which are highly mobile.

New officers for the Association are: (l-r) Lew Sefton, corporate secretary; Bob Huntwork, vice president; Don Mock; president; and Ralph Backstrom, executive secretary.

"Create an image" said Henry Engh (above left) of Salt Lake City. Dr. Carl Koehler, University of Calif., Berkeley (center), brought much needed data on conifer problems to the convention. Dean Jamieson (right) makes insect identification interesting and fun.

It was clear that this type of exposure broadened the horizons of many of those present as to the latitude of this expanding market. It also brought much truth to the theory that applicators in one area of the country are interested in what applicators in another part of the country are doing.

The educational program for the meeting was one of the best presented to any group in the nation. Henry Engh, Engh Floral & Garden Center, Salt Lake City, Utah, spoke on "Public Relations and the Pest Control Industry." Known as "Hank, the Petunia King," he told those present thats his image has created a viable market for petunias. He explained how he developed this image and what he does to maintain it. Being petunia king has done more to create new business and increase profits than any other factor, he said.

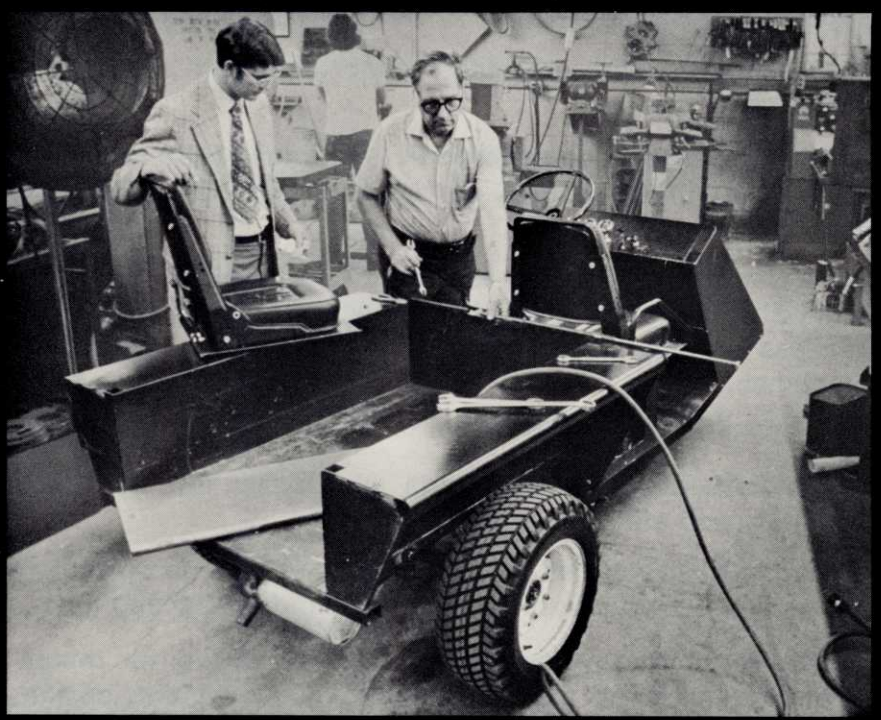
Dr. Carl S. Koehler, University of California entomologist outlined insect and mite pests that attack landscape conifers. He said that one reason for insect attack is lack of water. Trees and ornamental plantings under drought conditions are more susceptible to attack, he said. He pointed out that it is believed that the infestation of bark beetles in Monterey Pines this year was brought about by stress in the trees caused by minimal rainfall. This permitted the bark beetles to take over.

Another speaker was Dr. Dean Jamieson, vector control specialist, Santa Clara City Health Department. He has the ability to make a slide presentation on insects as interesting as when a Mack Senate Serial first hit the motion picture industry. He can keep you anxiously awaiting, for a half hour, his final slide picturing a male scale insect. His dry humor and intermittent reference to that final sexy slide make you forget that you are actually learning. But, you are! Dr. Jamieson planted the seed for a better name to describe the work of the horticultural applicator. He said to call it "Plant Protection" not "Pest Control."

The next speaker on the program was Dr. Larry Galloway, management development manager for Nalley's Fine Foods, a division of W. R. Grace, Co., Spokane, Wash. Galloway

(continued on page 17)

Hold everything!



Toro has a utility vehicle on the way that's strictly utility. It's called the Workmaster, and it's got a price tag lower than you'd believe. Comes complete with hydrostatic drive, up-front seating for two, more drawbar pull than competition (that's what horsepower's all about), a longer, lower, heavier-gauge box, automotive steering, and that's not all. It's simple, rugged, reliable and easy to service — and one thing more. It's a Toro.

TORO® WORKMASTER

TORO WORKMASTER

Here's why the Workmaster is worth waiting for!

FEATURES AND BENEFITS INCLUDE:

1. **Heavy-duty industrial-quality hydrostatic drive** — for infinite speed control, instant forward/reverse, high torque to rear wheels for drawbar pull that surpasses competition. A closed, self-lubricating durable drive system as in our Sandpro and Groundsmaster 72. No gears to change, no clutch to slip.
2. **Up-front seating for two** — provides comfortable, safe seating for driver and one passenger.
3. **Ease of maintenance is engineered in** — you don't have to empty the box to get at the battery. All frequently serviced parts (like the spark plug) are easy to get at.
4. **Automotive controls and more leg room for operator** — front wheel returns to straight-ahead position when steering wheel is released. The Workmaster requires less learning time, gives greater security and comfort than competitive machines.
5. **Oversize rear tires** — for greater hill climbing ability and sidehill stability.
6. **Lower center of gravity** — long, wide wheelbase; low box bed-height for greater safety and stability, less lifting.
7. **High capacity box** — carries existing engine-driven top dressers and sprayers, and earns the name Workmaster on all kinds of hauling jobs.
8. **A price tag lower than you'd believe** — you don't pay for things you don't need. The Workmaster is plain and simple with heavy-duty design, construction and components.

GENERAL SPECIFICATIONS*

ENGINE: Kohler air-cooled, 4 cycle — 14 H.P. at 3600 R.P.M. — 23.5 foot pounds of torque at 2200 R.P.M. — 31.27 cubic inches of displacement — compression release — Stellite faced valves — positive rotators on valves — heat treated crankshaft — 12 volt electrical system

FUEL CAPACITY: 8 hour fuel supply

WEIGHT: approximately 900 pounds

BRAKES: 7" x 1¾" hydraulic drum brakes with parking brake on rear wheels — dynamic braking to the rear wheels through the hydrostatic transmission — optional hydraulic drum brake for the front wheel

GROUND SPEED: 0-10 M.P.H., infinitely variable

GAUGES: ammeter and fuel gauges standard — hour meter optional

LOAD CAPACITY: 1000 pounds plus operator

SUSPENSION: full spring suspension on all three wheels

TIRES: rear tires - 23 x 8.50 - 12 - 4 ply — front tire - 18 x 8.50 - 8 - 4 ply

PROPULSION: infinitely variable hydrostatic transmission coupled to an automotive type differential

SEAT: full side by side seating for two

BOX SIZE: approximately 3' wide x 4' long

OPTIONS: hour meter — front wheel brake — folding ramp-type tailgate — headlights

(Our competition's green with envy!)

*Specifications and design subject to change without notice.
Toro is an exclusive trademark of The Toro Company.

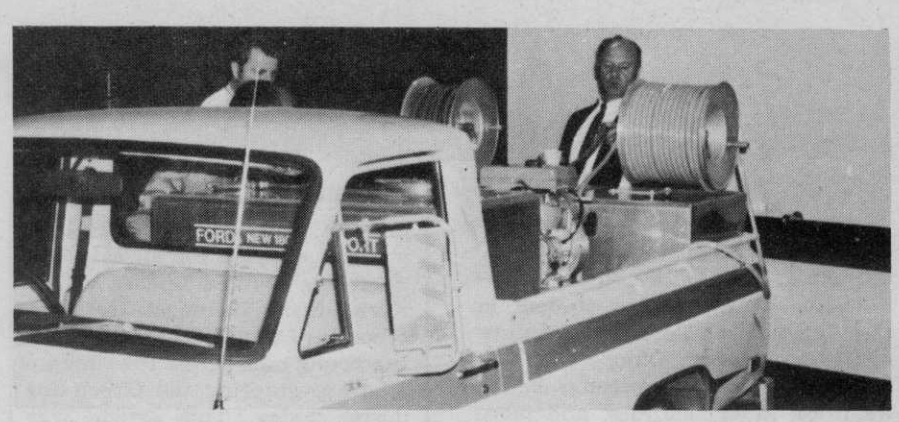
brought out his points in better management by first mentioning some of the good management concepts practiced by everyone. This makes you feel so good that you are anxious to absorb the things you aren't doing right.

Plant pathologist Dr. David Schlagel, University of California, emphasized the need for ornamental applicators to apply agricultural research in their work. "There are no integrated control techniques for garden use," he said. "They are all based on agriculture."

He referred to "residues in the environment that people get worked up about." This is really the pesticide issue which has gained so much publicity on the west coast.

Robert Kuykendall, training program specialist for new applicators, then reviewed what is happening currently in the Environmental Protection Agency. He pointed out that EPA is setting minimum standards and will accept state regulations for environmental protection chemicals en toto as long as they meet these Federal standards. EPA is currently holding public hearings at which applicators may present arguments for or against proposed rulings as outlined in the Federal Environmental Pesticide Control Act.

Dr. Bob Raabe, plant pathologist, University of California, then told the group about the latest advances in the use of systemic fungicides. He said that these new materials do not move throughout the entire plant. Those currently on the market generally exhibit upward (xylem) and outward movement to the leaf tips and margins and not downward (phloem) movement. He said that hardened parts of the plant do not pick up materials well.



In addition to the tour of member facilities, delegates viewed commercial displays of equipment and chemicals within the meeting room. This complete spray unit was for sale and ready to go.

During the following day's discussions Del Kennedy of the J. J. Mauget Company, Burbank, Calif. explained the Mauget tree injection process and the various products which may be injected into trees for better, sustained growth. He also pointed out how these products could be used to enlarge an applicator's business and augment the services which he currently provides.

This year the International Pesticide Applicators Association present a Distinguished Service Award to Lew Sefton for his contribution and service as executive secretary and editor of the association and its newsletter, The Professional Applicator.

In addition, ladies attending the convention were treated to a Bay cruise to Tiburon, a quaint little suburb. As part of their tour, the women saw the San Francisco skyline, prisons, bridges, had lunch at an exotic restaurant, and shopped on a little "atmosphere" street in one of the older parts of the city.

Don Mock and Bob Huntwork were re-elected president and vice president, respectively, for the 1973-74 year.

Other officers and board members are: Bob Skanes, Tacoma, Wash.; Jack Daniels, George Harrison, Rod Fairbanks, Stan Raplee, all of Seattle, Wash.; Bill Gildroy, Lake Stevens, Wash.; Lew Sefton, Lake Oswego, Ore.; Garry W. Mulkey, Junction City, Ore.; Bill Owen, Clackamas, Ore.; Charles Seibold, Milt Ellis, Ray Collier, all of Portland, Ore.; Jim Stevenson, Oakland, Calif.; Paul Walker, San Diego, Calif.; Jim Osborn, Danville, Calif.; Alvin Wallman, Sonoma, Calif.; and Don Caldwell, Salt Lake City, Utah, member-at-large.□

"Distinguished Service Award" was presented to Lew Sefton (r) by Don Mock as IPAA first exec. sec. and editor of the newsletter, The Professional Applicator.

Don Mock was re-elected president of IPAA for the next year. Through his leadership the organization plans to build an active membership campaign to include applicators from many other states across the country.

From Common Laborer

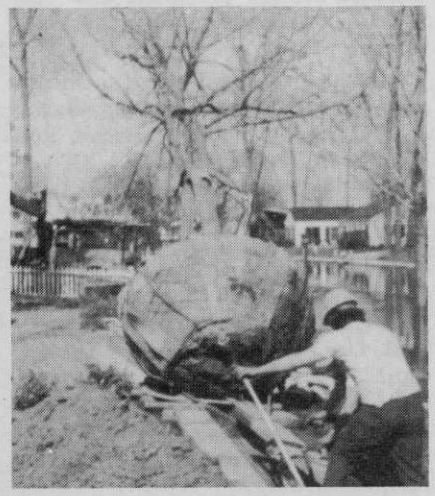
By DICK WOODS

IT ALL STARTED when I enrolled as a two year student in the Agricultural Technical Institute (ATI) in Wooster, Ohio.

My goal was to become better qualified in horticulture, and more specifically the areas of landscape design, turf management and arboriculture. After a year in the program, I'm convinced I made a good decision. These are the dividends I expect to receive: an Associate Degree in Applied Science; learn a trade; and, study under some of the best professors, instructors and businessmen in the field.

Editor's Note: Dick Woods is a student studying for an associate degree in applied science at the Agricultural Technical Institute, Wooster, Ohio. He is typical of the young men across the country who are entering the Green Industry today. This article was written for WEEDS TREES AND TURF by Dick to express his appreciation for the training he is receiving and to tell others about his experiences.

I was a little naive at first, I didn't know what was in store for me. I can say now that I've worked some of the hardest and longest hours in my life, but felt some of the greatest feelings of accomplishment. Let me tell you about some of them.



One of my early jobs was planting nursery stock. We're ready to place this tree in a customer's yard here.

Landscaping is a lot of "fun" when you are knee deep in mud on a cold April morning.

Insect and disease control are important considerations to homeowners in northern Ohio. I learned how to apply chemicals for their control.

Some of the equipment I learned to operate included this boom. It is useful in removing large dead limbs from trees.

My school courses are pretty much what students in the beginning years of college are exposed to, math, chemistry, business management and other subjects. In addition, ATI is also exposing me to courses in turfgrass culture, horticulture, arboriculture, landscaping, nursery management, propagation of woody ornamentals — all of which I know will be put to use when I graduate.

Perhaps the part of my studies that needs the greatest amount of explanation is the earn/learn occupational internship program. This is where the student works for 18 weeks with an established business in the field. The company must be located in Ohio and approved by ATI. It is something like on-the-job training.

Because of my interest in landscaping and arboriculture, my professor, J. E. Kinsey, suggested that I talk with Larry Holkenborg of Larry Holkenborg Nursery, Inc., Sandusky, Ohio.

I first met his full-time foremen, Paul and John Leimeister. This gave me a chance to see how the company operated from an employee's view. They gave me a copy of the Company Policies to read and understand. Paul said that all employees are given these policies in order to maintain a position with Holkenborg Nursery. I asked many questions about what they did and they, in turn, asked me what I wanted in the way of a job. Then I met Larry, who by the way is a landscape arborist and a landscape horticulture graduate of Ohio State University.

After spending the better part of the afternoon going over aspects of the business, we decided to make the final decision on my internship position pending housing facilities and a favorable report from Larry's foreman.

Everything worked out fine, because at the Ohio Short Course last January, Larry, Professor Kinsey and I signed the contract. It was agreed that Larry would provide the best training possible in all related fields, would change my job duties at various times for maximum exposure to the business and explain and dis-

To Foreman In 3 Months

cuss other aspects of the job.

I first arrived to work on March 26. In about as much time as it takes to remove a tie and put on a pair of gloves they had me planting and selling nursery stock. I began digging trees and shrubs to place in show beds for immediate delivery to customers. Paul Leimeister showed me how to properly dig a tree or shrub. It was *work*, but after many days of digging I learned how to do the job well. I even learned some of the short cuts to this phase of the business.

As the weather became warmer and more predictable, we began the initial spring lawn cleanup program. This involved power raking, mowing, fertilizing and general cleanup of lawns and border shrubbery. This job became boring to me as time went on, but the end result was always a beautiful lawn.

When lawn cleanup jobs were completed in May, all of us began planting trees and shrubs. Larry would explain to me different shrubs to use in various landscape situations. He demonstrated the correct way to plant an ornamental. As expected, I didn't always plant them correctly at first. That's when the most learning was gained; the job would have to be done over until it was right.

The details of my various assignments under Larry Holkenborg would fill a book. Larry is a perfectionist; any job I did had to be done right or I quickly found myself doing it over and over again.

Before I was promoted to temporary foreman, my assignment was to design and implement a landscape plan.

That's when the "fun" began.

My responsibilities were: all work be completed as prepared by the landscape design, proper planting depth and watering of shrubs as previously learned; being sure that the area was cleaned up after work; leaving watering instructions with landowner for newly planted stock; preventive maintenance on equipment; and making out the daily work order for the jobs completed each day. This also involved getting the customer to sign off the job on these work orders and writing a report.

I found that one of the greatest challenges I've experienced in my 19 short years is being a foreman over men twice my age. It made me put myself in their place when I would assign various jobs to be done. I had to ask myself if I would do this job or that job. I quickly realized that being a foreman is no picnic!

All the while, Larry's right-hand men, Paul and John Leimeister, kept

(continued)

Ohio's Earn / Learn Concept

By J. E. KINSEY, Asst. Professor Horticulture
Agricultural Technical Institute, Wooster, Ohio

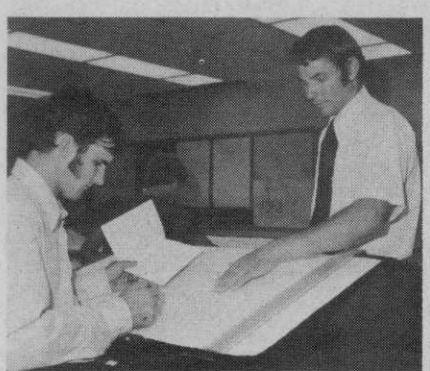
Stretching technology to fill a need is the objective of the new Agricultural Technical Institute (ATI) in Wooster, Ohio. Billed as the only two year technical institute in the U. S. devoted entirely to agriculture, ATI serves a state-wide function, drawing students from all corners of the state and many from out of state.

Ornamental horticulture is one of the largest enrollment areas, although the 450 students attending ATI this fall may pursue any one of 15 agricultural programs. The horticultural areas of specialization include: floriculture and greenhouse management; landscape design, construction and contracting; turf management; and nursery management.

As part of these cirricula, students take basic courses such as math, chemistry, botany and communications. All take five courses dealing with agricultural business to help them become more proficient at personnel, money and materials management. Technical preparation courses include: plant materials, plant propogation, landscape design, landscape construction, turf management, diseases and pests, mechanics, irrigation and drainage, garden center management, arboriculture and nursery management.

An earn/learn occupational internship is required before the student receives his Associate Degree in Applied Science. It takes 18 weeks of on-the-job training with cooperating horticultural businesses and industries. Supervision includes activity reports and a term paper by the student, evaluation by the employer and visitations by the instructor.

The first internship program at ATI was so successful that half of the 50 students in the horticulture areas were offered permanent jobs when they graduated.



My professor, J. E. Kinsey (r) reviews my landscape designs in a classroom at ATI.

While affiliated with Ohio State University and the Ohio Agricultural Research and Development Center (OARDC), ATI basically stands on its own feet. It has a thirty acre campus and a $3 million physical facility. Maintenance and landscaping responsibilities are detailed to students, including the greenhouse, turfgrass plots and greens, and ornamental gardens. Students also operate all the equipment needed to maintain the areas.

As further development, students attend many conventions, trade shows, field days and clinics as well as field trips to visit industry. Guest speakers are frequently invited to discuss industry problems.

ATI has helped fill the void between the top level ownership-management and the laborer as middle eschelon managers, foremen and supervisors in Ohio. Programs in other states are also accomplishing goals, too. Through this effort, the Green Industry can be assured of having qualified and trained leaders in the future.

After you are tied into a tree, a climber can easily work without fear of falling. I'm pruning this tree up near the top. Note that I'm tied into a main leader.

teaching me new and better ways to complete different jobs in a shorter amount of time. It's one thing to learn out of a textbook or by experience, but quite another to be taught by an expert such as Paul. With the Sandusky area as my classroom and Paul as my teacher, I was able to pick up his excellent techniques.

Paul would demonstrate how to prune shrubbery and then stand back and observe while I tried it. When I'd make mistakes, he'd correct me and coach me until I got it right. This showed that they really cared for the best job possible. Pruning is not an easy job; it requires much time and patience. But as Larry says, "A good job only takes a little longer."

In June we started tree pruning. I was a real rookie at this job, since I'd only climbed one other tree in my entire life. John first showed me how to tie the basic knots used by arborists. I was all thumbs at first, but slowly I was able to tie the various knots. Then he showed me the safest ways to move about while in a tree. This was one area in which Larry is very strict. He was always teaching and showing the safest ways to get a job done. I can honestly say that safety was foremost in every job I did during my internship.

Larry supervised my tree climbing training like an eagle. He watched my every move, commenting where I put my feet, how I tied myself in, where to place a rope, which limb to throw a rope over, etc. For a while I thought I would go "bananas." But Larry's interest in my safety paralleled my own concern for my safety. I had no desire to fall out of a tree. So I paid close attention to what he told me. Larry has written a paper on the safe climbing technique. He feels a man should always be tied in when climbing a tree. (See WTT, Aug. 1972 P. 20)

Once I felt at ease in a tree, we got down to learning the job to be done. One of the most important and useful steps learned was that of making flush and proper cuts. It looks easy, and it is if you know how to do it. However, good instruction is a must.

Next, I was taught how to operate the company's boomtruck and hydraulic stump remover. Experience with every piece of equipment in their inventory was my objective. Over the period of my internship I believe I satisfied this.

In late June I was promoted to fulltime foreman. I'd had a taste of this in May and now Larry decided I was ready for the big time. Most of my jobs involved landscaping, although I did do some nursery and tree work. My foremanship taught me to look at each individual as a completely different person. I found that each had different ideas and each expected different performances than the next person.

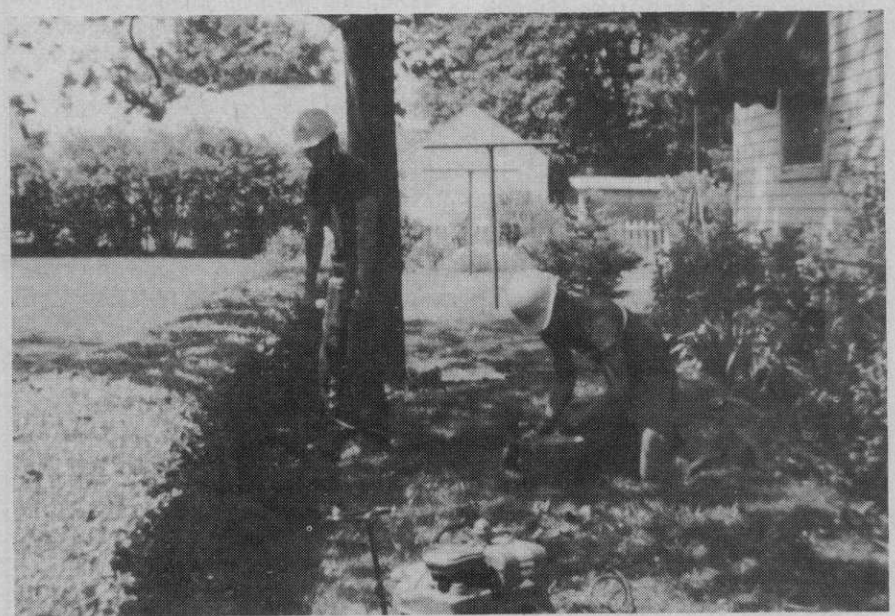
I also discovered that having all the responsibility was not as easy as it looked. There always seemed to be a new problem to solve or a decision to be made. I grew to understand why Larry, John and Paul has spent so much time in properly teaching me the "tools of the trade."

Larry Holkenborg is the kind of guy who doesn't believe in training a man from 8 a.m. to 5 p.m. five or six days a week. No sir! He expected me to "burn the midnight oil," too. By the beginning of June, I had received my certificate from the National Arborist Association for completion of eight lessons in Series I of two series of the Home Study Program.

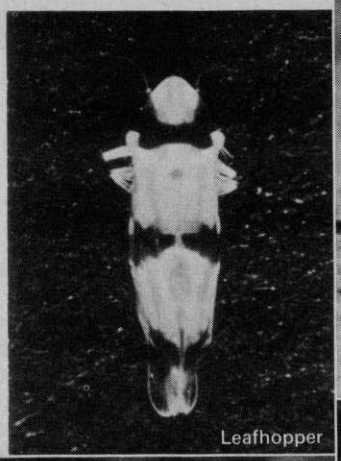
I was also accepted as a student member of the International Shade Tree Conference, Inc. Larry took me to the meeting of the association's Ohio Chapter and later made it possible for me to attend the 49th annual meeting of ISTC in Boston. I consider this a highlight of my internship. It let me rub shoulders with true professionals in the field and opened my eyes to the great challenges confronting this dynamic Green Industry.

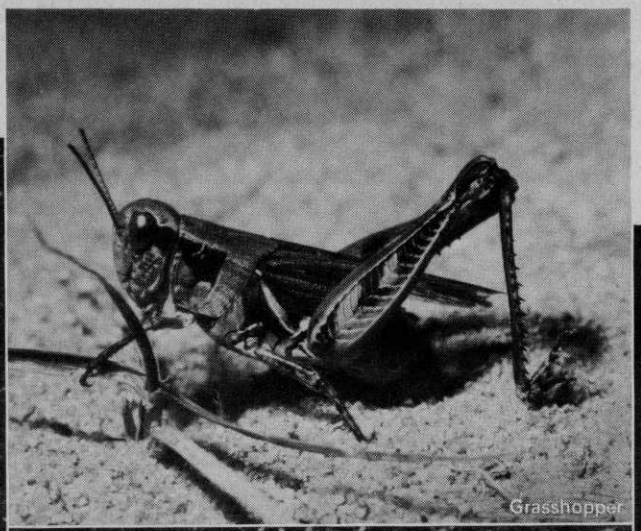
Completion of my training came in July. It was time to return to school and to the books. I knew that while my on-the-job training was drawing to a close, my training and

(continued on page 32)



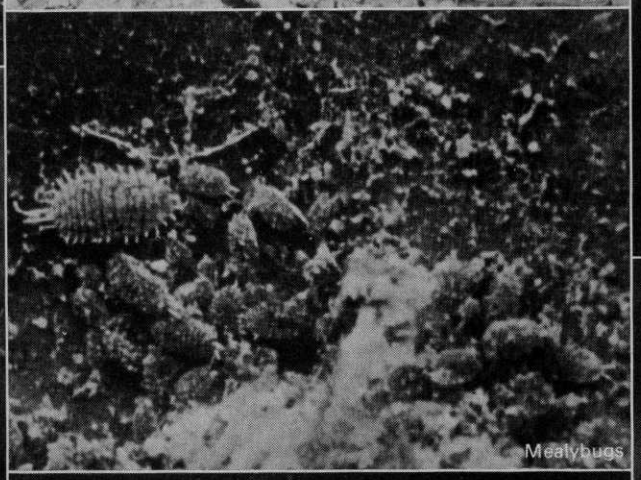
Part of my training involved deep root feeding. Larry and Paul showed me how to operate the drill and how to fill holes with fertilizer. Deep root feeding is an important step to proper tree care.

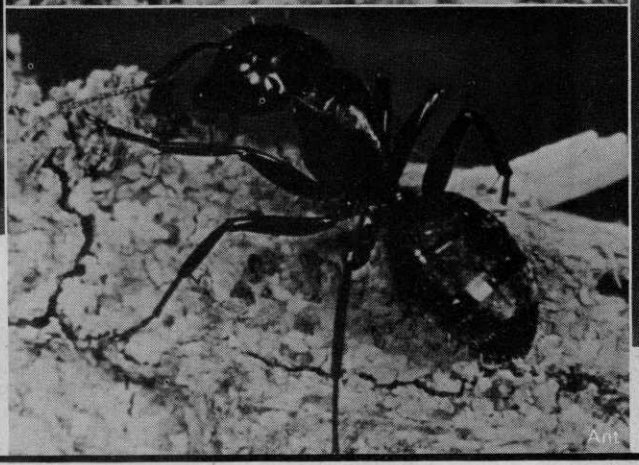

Leafhopper


Grasshopper

Hairy chinch bug

Cutworm


Mealybugs


Ant

Bagworms

Ag-Organics Department, Midland, Michigan 48640

These are only seven of the turf and ornamental pests Dursban controls. If we had more space, we could show you another seven. Like sod webworms, brown dog ticks, earwigs and Hyperodes weevils in turf. Or ornamental plant pests like mites, spittlebugs, exposed thrips, white flies and many more. But our point is, DURSBAN* insecticide is the choice of professional lawn spraymen when they need to get the job done. DURSBAN insecticide is effective on a wide variety of insects—including resistant strains. And it's effective in a wide variety of applications. It's economical because a little goes a long way. It's non-phytotoxic, and it is biodegradable. So, if you haven't tried it yet, it's about time you did. Just remember to read the directions for use and follow the precautions for safe handling on the product label.

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DOW*

DOW CHEMICAL U.S.A.

For More Details Circle (111) on Reply Card

AGRONOMIST DR. ORVID LEE TALKS HERBICIDES AND SEED

Editor's Note: The Willamette Valley of western Oregon has become established as the center of world grass seed production, and herbicides are recognized as the best, most complete and least expensive route for keeping weeds out of seed. Choice of herbicide, time of spraying, rate of spraying, soil moisture and method of application spell success or failure for the grower.

Back of the grower, however, are new ideas and trials of investigators such as Dr. Orvid Lee of the USDA stationed at Oregon State University in Corvallis. In the following interview, Dr. Lee responds to some timely questions on grass seed output and development.

Q. There has been dramatic progress in Oregon's $30 million seed industry in the past 25 years. Research-wise, where are we now?

Dr. Lee: Growers and seed companies have the basis for still more progress. We can identify seed industry needs better today and we have the capacity to undertake joint programs to meet those needs, with a very large reservoir of know-how among the growers.

Q. How would you summarize research progress and industry progress?

Dr. Lee: In a single word it is **precision.** We have always had a target, for example, of growing seed that is free of weeds. But we have been able to raise our standards through new techniques that are increasingly precise. Herbicides have played a key role in these techniques.

Q. Can you be specific?

Dr. Lee: Well, we have half a dozen different herbicides, and most seed growers have learned how and when to use them. Two new ideas in the past few years are the chemical seed bed and charcoal seeding. Both are designed to establish seedling grasses that are completely weed-free.

Q. How are these ideas applied by a grower?

Dr. Lee: When the chemical seedbed technique is used, the grower prepares the field for planting in the fall. Weeds and volunteer crop plants which germinate during the fall and winter are controlled by spraying with 2,4-D and IPC or with paraquat. The crop is then planted early in the spring without additional tillage. Since most of the troublesome weeds germinate during the fall and winter they are eliminated from the surface soil before the crop is planted. When the charcoal banding technique is used, activated charcoal is sprayed in a narrow band over the crop row at the time of planting. The field is then given a broadcast application of Karmex diuron. The activated charcoal over the row absorbs the diuron protecting the crop plants planted beneath it. The result is a grower can more easily meet his responsibility of producing weed-free seed.

Q. What kinds of grasses are these ideas used for in Oregon?

Dr. Lee: Growers here now produce 100 percent of the nation's annual and perennial ryegrasses, more than 99 percent of the bent grasses, 99 percent of the chewing and creeping red fescues, and about 72 percent of the orchardgrass. If you include Washington and Idaho, we also produce over 90 percent of the bluegrass. Altogether there are at least 1,000 growers of seed in the area, where there is a rather unique combination of climate and soil conditions that are ideal for seed production.

Q. Are new seed varieties developed here?

Dr. Lee: Yes, but our real contribution is our ability to multiply seeds that are developed elsewhere. We increase breeder seed more efficiently than anywhere in the world, and seed companies turn to Oregon growers to meet specific demands for their new varieties.

Q. How does your work tie in with the new varieties of seed?

Dr. Lee: My function is to help keep contaminants out of the seed. By this, I mean weeds and unwanted crop grasses. Seed companies are now going direct to the growers to multiply their new seeds. We have to keep ideas and know-how flowing to the growers, so they can meet their seed contracts on the new varieties. With about 40 trials and tests underway every year, many on growers' fields, we are able to generate a lot of understanding rather quickly.

Q. Does this apply to how growers use herbicides?

Dr. Lee: It certainly does. Split applications of Karmex, for example, have been found useful in fall and winter, when we get most of our rains. But we have found it necessary to adjust the rates, depending on specific grasses that are being grown. A grower must learn this, and field trials are a great teaching tool . . . as well as a learning experience for any investigator.

Q. What kinds of tolerances does a grower have to meet?

Dr. Lee: When it comes to weeds and contaminating crop seed, he must have 100 percent control or he is penalized on price. A decade or so ago, a grower was permitted 3 percent annual bluegrass in certified seed; today annual bluegrass seed cannot exceed 0.30 percent in certified seed. In some states today the tolerance for annual bluegrass in seed is zero. A grower can usually earn a seven to ten cent or more per pound premium for weed-crop-free seed — that's a very worthwhile target.

Q. How has all this affected his use of herbicides?

Dr. Lee: Where a grower was once concerned with establishing his crop first and then eliminating the weeds, now he is working to keep the weeds and unwanted grasses out of his seedling crop right from the start. That's where the chemical seed bed, the charcoal seeding with Karmex, split applications and alternate applications of herbicides all fit in. Our growers are combining these ideas.

Q. What is the most critical period, when it comes to herbicide use by a grower?

Dr. Lee: Getting a clean grass seed crop established is the most sensitive part of his operation. His first responsibility, of course, is to plant clean seed on clean land. Then he must keep weeds out as seedlings develop — this can be difficult.

Q. What kinds of gains have growers realized through new herbicide programs?

Dr. Lee: The chemical seed bed concept provides a good example. Prior to 1965, a 20-30 percent failure in stand establishment was normal. The loss stemmed from competitive grasses and weeds. But this loss has been sharply reduced — especially on flat areas, where the new techniques can be employed. Use of the chemical seed bed or charcoal seeding has already established new standards in getting a crop started.

(continued on next page)

Dr. Lee runs more than 40 trials each year. Here, John Couch of Du Pont and Dr. Lee review results of 1973 trials.

Equipment check of seed harvest reflects Dr. Lee's interest in diverse aspects of his field trials. This unit is used in small scale tests.

Q. What kinds of problems do growers face today?

Dr. Lee: One is the possible application of new regulations that will limit a grower's opportunities to try new compounds and new techniques. The grass seed grower is in a key role, when it comes to the environment. His crop is needed and wanted by the turf and forage industries, but he must have a measure of flexibility in herbicide use to be able to deliver seed. If we limit this flexibility, we cannot look for the quality seed that we have come to expect.

Q. Is the seed grower aware of this situation?

Dr. Lee: Many are not. They are accustomed to precision application of herbicides; they understand risk-benefit ratios in these applications. If broad spectrum herbicides or long-lasting herbicides were suddenly banned, a grower would be handcuffed in his program to deliver weed-free seed. The trend to eliminate some of the residual herbicides should be a matter of concern not only to seed producer and turf producer — but also the consumer who wants a weed-free lawn. Without these products, we could not keep the U.S. green and there would be no export of grass seed, which today is a flourishing, useful business.

Q. Any other problems on the horizon? What about Oregon's proposed ban on field burning of straw, after a crop is harvested?

Dr. Lee: This ban, now scheduled for 1975, has cast a shadow on the entire seed industry in the state. Quality is going to be a problem. Burning now helps to destroy most of the weed seeds in a field and creates conditions which are favorable for herbicide activity. It also helps control disease and provide a means of disposing of crop residues. Seed growers have depended on field burning as a basic cultural practice. There is work on a mobile incinerator to make it possible to continue burning with much less smoke. We are exploring concepts for alternating crops in vegetable areas, but as of now, we have no real solution. Field burning has been needed — it is still needed.

Q. How long does it take to introduce a new idea to seed growers?

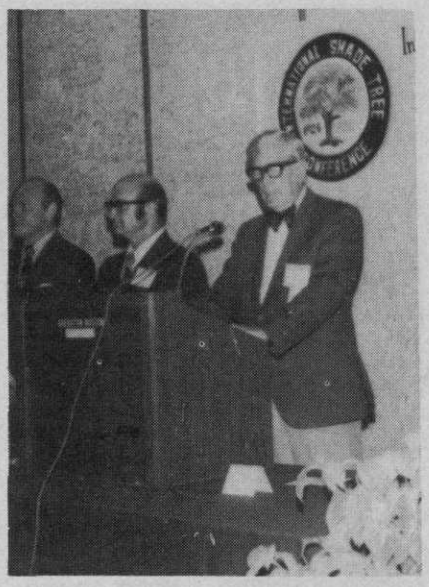
Dr. Lee: Four or five years are usually involved. We started our initial studies on charcoal seeding, for example, back in 1967; we have had a label on the idea with Karmex for two years, and much of our current program is still involved with this technique. The practice is quite widespread in Western Oregon, but it is still being developed east of the Cascades.

Q. What, then, are basic resources of the seed industry?

Dr. Lee: It comes down mostly, I think, to people. The industry is a complex one that uses a wide range of techniques just to control weeds, for example. In Western Oregon, we have a unique combination of physical elements, but we also have the people who have learned how to use these elements and their know-how is irreplaceable, when it comes to growing seed on 275,000 acres of land. The same situation applies in Central and Eastern Oregon, where another 25,000 acres of seed are grown each year. Our growers have a vast amount of experience in seed production. It is an extremely valuable resource. □

Shade Trees Symbols Of Freedom

International Shade Tree Conference Report



General chairman Daniel W. Warren, Jr. opens the 49th convention. More than 900 ISTC members and guests attended the Boston meeting.

"A Tree Party In Bean Town" turned out a record crowd as more than 900 delegates attended the 49th annual convention of the International Shade Tree Conference, Inc., in August.

This was the first time since 1960 that ISTC had met in Boston and the warm hospitality of the New Englanders prevailed throughout the meeting to make it a success. A program as varied in scope as the members who registered and yet as comprehensive in subject coverage as a professional spray job sounded the bass drum of realism for every speaker.

Although the local papers carried little, if any, reports as to the magnitude of the meeting, it is of interest to note that most arborists went home knowing much more about the environment, pesticides, disease control, physical damage of shade trees and a host of other important subjects. More specifically, the subjects discussed will likely play a decisive role in shaping events of the future for the arborist — and the general public.

Probably the hottest subject — and best attended — on the program was the Federal Environmental Pesticide Control Act (FEPCA). Acting as interpreter between the Environmental Protection Agency (EPA) and the arborist was Hyland R. Johns Jr., Asplundh Tree Expert Co., Jenkintown, Pa. He cut through much of the bureaucratic language surrounding the new law and explained the act in common terms to the group.

Using two slide projectors and two screens, Johns reviewed the need for governing the use of environmental protection chemicals and the need for developing criteria to regulate the application of these products. He pointed out that about 70 percent of the population lives on about 3 percent of the land. Agricultural and forest land is being turned into parking lots, shopping center, housing and other uses at the rate of 1.2 million acres per year.

We've had control of the manufacture, registration and shipment of pesticides since 1947, said Johns. The new law expands this control to include users and applicators of these materials.

He pointed out that FEPCA is complex. When it was passed late last year (See WTT, Nov. 1972, p. 7), only certain parts became effective immediately. There was a specific timetable set up in EPA for the rest of the law. This is:

- Jan. 21, 1973 — Publication of Disposal and Storage Regulations. Proposed regulations were actually published May 23, 1973; final version to be published near the end of the year.
- Oct. 21, 1973 — Publish standards for application certification; Publish regulations for registration of establishments.
- Oct. 21, 1974 — Promulgation of regulations governing classifications and registration of all pesticides.
- Oct. 21, 1975 — Deadline for state compliance on certification of applicators.
- Oct. 21, 1976 — Certification of applicators and registration/

(continued on next page)

News And Opinion . . . By JAS

The afternoon session of the commercial and municipal arborists turned out to be rather lively. It opened with a speech on "Research Developments and EPA Regulations Affecting Dutch Elm Disease Control," by Dr. Charles L. Wilson of the Shade Tree Laboratory, a USDA funded institution in Delaware, Ohio.

Dr. Wilson drew his conclusions from research conducted by the Shade Tree Laboratory and studies at universities and laboratories. It is well-known that many tax dollars have been used to investigate pressure injection and Wilson has been a strong proponent of this method of injection over the low or no pressure injection.

He pointed out early in his speech that knowledge in the area of pressure injection is limited. Yet he said that this is where the action is today. "Up to now we have been letting the tree do the work of carrying material," he said.

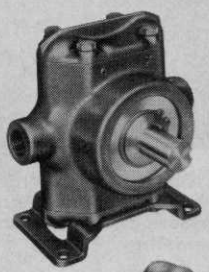
Ignoring the manufacturers of low or no pressure injectors, he affirmatively stated that high pressure "is the best way to get material into the tree. It beats the Mauget injector," he alledged.

Yet Wilson could offer no proof or solid conclusions for his beliefs. He stated that currently there is no labelling for pressure injection of benomyl into trees. "Everything is experimental," he

(continued on page 46)

Hypro Pumps
for applying weed and turf chemicals

PISTON PUMPS



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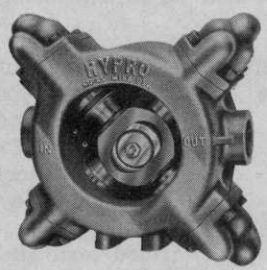

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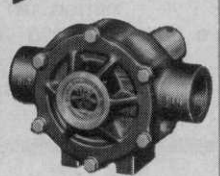

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A colonial militia replete with fife and drum and honor guard demonstrated their authenticity during the opening session. The New England Chapter, ISTC, was host for this year's meeting.

reclassification of all pesticides.

Hyland Johns said that although this is a Federal law, it is basically designed to be administered by the various states. "Any state that makes a reasonable effort to comply with this new pesticide control act will be allowed to administer its own program," he said. "Many of the details have yet to be worked out at Federal and state levels. Guidelines are being written for benefit of the states, but they are not law — and they can be changed. Our job will now be to work with the states as they implement FEPCA."

The next day delegates toured the Arnold Arboretum, an expansive tree sanctuary. It is directed by Dr. Richard A. Howard. A cafeteria approach of activities surrounded the day. Commercial field demonstrations by allied manufacturers of equipment and chemicals were on display near the main gate of the Arboretum. Buckets, chain saws, chippers, sprayers, tree spades, and other power tools were demonstrated for arborists. Of particular interest was the new "whisper chipper" by Asplundh. It's noise emission is well under the maximum.

In addition, classes in Bonsai, poisonous plants, terrarium construction and maintenance, and other interesting programs were offered to men and women alike.

Bus tours of the Arboretum grounds were scheduled throughout the day.

In the session involving utility

Delegates visited with manufacturers of tree care equipment at the exhibit area. Exhibitors also demonstrated eqipment at the exhibit area. Exhibitors also demonstrated equipment during the field day.

Supplier personnel and delegates exchange ideas about equipment needs. Operator safety and performance were stressed both at the static display and in the demonstration area.

arboriculture, Robert J. Kelly, regional representative of Detroit Edison Co. said that the business of starting and maintaining good public relations appears to be gaining interest. He mentioned that while public relations is being honest with yourself and your fellow man, the ultimate responsibility for the success or failure of a P. R. program lies with the firm's chief executive officer.

Kelly cited several instances where good internal relations — one key to external or public relations — built company goodwill. He also listed the ten commandments of human relations as a guideline to follow for a public relations program. They are: 1. speak to people; 2. smile at people; 3. call people by name; 4. be friendly and helpful; 5. be cordial; 6. be genuinely interested in people; 7. be generous with praise; 8. show consideration to others; 9. be thoughtful of other's opinions; 10. be alert to give service.

A panel discussion on rights-of-way clearing was held in the afternoon. Speaking on his experiences as supervisor of chemical programs for Penn Line Service, Inc. Scottsdale, Pa., John Lee Gillespie told the audience about some of the methods he's employed in removing brush from rights-of-way. He said that prior to burning bans, brush would be cut and burned and stumps would be disposed. But now different methods are used. He discussed in detail the use of tree chippers manufactured by Morbark Corporation. He also pointed out that most rights-of-ways, once they are cleared, have their brush managed and controlled by means of herbicides. However, there is an increasing need in some areas for mechanical methods of brush control to augment these chemical methods, he said.

He mentioned his experiences with equipment such as National Hydro-Ax and Brush Hog as a means of keeping brush in check.

William J. Neidig, vice president, Asplundh Brush Control, Hamden, Conn. then talked about the changes in public attitude in the past two decades. "Twenty years ago the announcement of a new transmission line was a symbol of prosperity," he said. "Today the announcement of a new transmission line is considered an encroachment on the environment."

Neidig said that about 3,600 electric utilities in the U. S. operate over 300,000 miles of overhead lines which occupy 4 million acres of land for rights-of-way. "With the demand for electric power doubling every ten years, it is estimated that approximately 100,000 miles of new

(continued on page 44)

F. Lewis Dinsmore, new ISTC president, proceeds to the rostrum during the opening session. He is followed by Daniel W. Warren, Jr., general chairman, and Dr. John A. Weidhaas, Jr. ISTC past president.

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Sprinkler head assembly knowledge is important. These students may be faced with a head repair job. Knowing how to disassemble and repair a head may save many hours of work later.

Bruce Camenga discusses p heads during the classroom are limited to only a few st student contact.

Irrigation University . . . Teachin

IN MAY 1973 WEEDS TREES AND TURF initiated a two part irrigation survey among its readers. Part I was to golf course superintendents and Part II included parks and grounds superintendents, Weeds Trees and Turf commercial turfgrass managers, irrigation contractors, etc.

One of the most profound findings was that more of our readers are planning on installing underground systems themselves than ever before. Fifty percent reported they would do it themselves and 50 percent stated that they would have it installed. A similar study conducted by this magazine in 1970 showed that 80 percent would have the job done by someone else and 20 percent would do it themselves.

Why this sudden change? The answer is threefold: Dollars involved; people more aware of the mysteries of underground irrigation; and, poor design and function of installed systems. In defense of this latter statement, many systems have been installed on a dollar basis alone, whether the system was one of proper design or not.

The irrigation survey showed that the four major complaints of an underground irrigation system are: 1. lack of reliable water men to work manual systems; 2. poor design; 3. system not designed to cope with wind; and 4. broken plastic pipe and pipe joints.

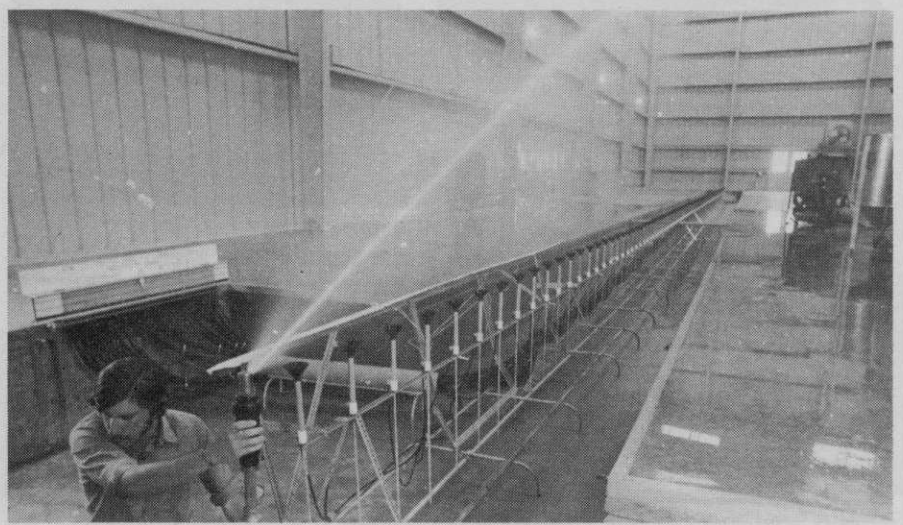
In addition, it is a well-known fact that this industry is under the stress of tremendous growth. Witness the construction record of new golf courses, the conversion from manual to automatic irrigation systems on existing golf courses, openings of spacious shopping plazas and the increasing use of irrigation in parks and you will quickly see that the greening of America is no myth.

This tremendous rate of growth has not been matched by people who have the practical and technical skills. While experience in irrigation systems still is a good teacher, the pace of the market is such that few have time to benefit from this slow process. Extra emphasis placed on individual product sales has in some cases worked to the detriment of the industry as a whole.

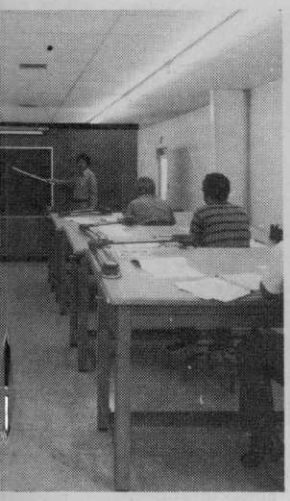
A degree of confusion floats about as to system names, sprinkler heads, controllers, valves, pipe, pressure, cost and as many as a score or more variables. With the number of variations possible from one manufacturer alone, a user could easily become confused and flustered in trying to design and implement a system.

Small wonder, then, that some architects, installers and even distributor salesmen tackle irrigation system design without complete knowledge of the problem at hand. They've all seen underground sprinkling systems that do a poor job of watering. Their only hope is not being forced to design one that duplicates an already bad mistake.

With this information in mind, WEEDS TREES AND TURF concluded that the greatest challenge facing the irrigation industry today



Inside the test facility at Toro is an elaborate hydraulic measuring device. Here, worker determines the dispersement of water over an area. Note hydraulic gauge at left.



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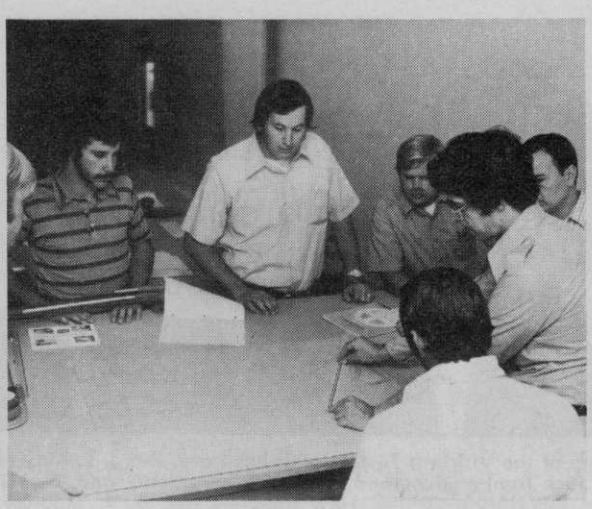


Designing an automatic underground irrigation system requires knowledge of heads, pipe, product strengths and weaknesses, special product features and design techniques.

Individual and small group classes give the student time to bring out individual problems. Bruce Camenga creates an informal atmosphere in his discussions and instruction.

ng Industry The Fundamentals

is in providing knowledge and practical training to individuals to cope with system design. This challenge has brought forth many new ideas. But perhaps the most unique is one developed by the Toro Company.

They, too, had been concerned with the widening gap of trained vs. untrained people. So a little over a year ago they formulated a plan which formed the cornerstones of an industry-wide school on irrigation that is now starting it's second year.

It's called "Irrigation University," and it is the only one of it's kind in the country—or the world for that matter. What makes it different is that the course of instruction is built around the physical application of irrigation rather than product, product, product.

Toro states their reasons for starting the university as: 1. knowledge of equipment, accessories and assembling must be correctly used to develop a system that does the job; 2. innovative features of product lines will reduce overall cost, when properly applied; 3. strengths and weaknesses of products is paramount for profitable success; 4. the need to extend knowledge to the in-

(continued on page 31)

Toro's 1973-74 Schedule Of Classes

Enrollment in technical training courses during the 1973-74 season is expected to be at least three times higher than last year, according to Bruce C. Camenga, manager of field technical training for Toro's irrigation division at Riverside.

He's expecting enrollment to exceed 175 in eight different courses, scheduled from now to next June.

Organization of the courses has been completely restructured to relate course content and class schedules to specific areas of irrigation interests, says Camenga.

Classes are scheduled for residential contractors, distributors management, distributor specialists, landscape architects, golf course architects, governmental designers, golf course superintendents, parks and grounds superintendents and college and

Classes scheduled include:

- Distributor specialists, a university instructors.

program for irrigation technicians on design for all markets. To be scheduled.

- Landscape architects, reviewing fundamentals of irrigation design and product applications for the commercial market, Oct. 29 - Nov. 1.
- Residential contractors, for the beginning contractor and new distributor personnel dealing with these contractors, Nov. 6-15 and Dec. 8-17, (two courses).
- Golf course architects, to review and strengthen the concepts of golf course irrigation design, Dec. 17-20.
- Governmental designers, to upgrade the skills of city, county, state and Federal agency irrigation designers, Nov. 27-29 and Dec. 11-13.
- Commercial turfgrass superintendents, including superintendents of parks and grounds, golf courses and other turfgrass areas. Course will bracket the annual convention of the Golf Course Superintendents Association of America, Feb. 5-7 and Feb. 11-21 (two courses).
- College and university instructors, a course in hydraulic theory, design theory, product application and installation procedures for instructors who teach turf irrigation, Jun. 18-27 and Aug. 21-30. (two courses).

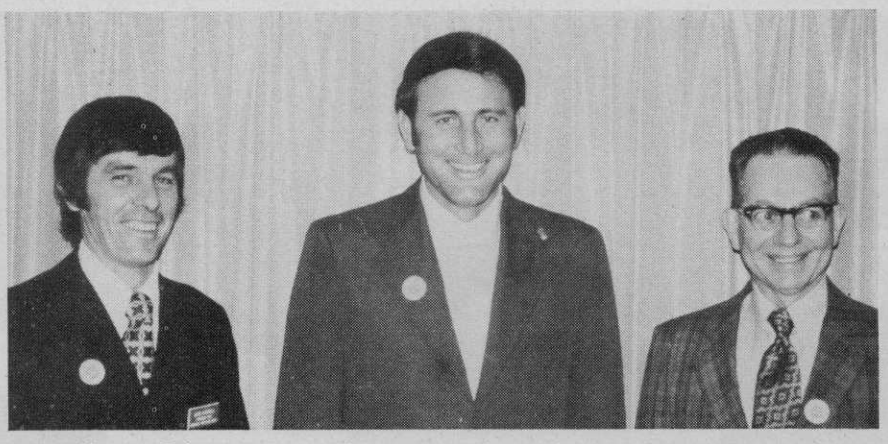
All of the courses will be held in Toro's new training and research center at the Riverside, California plant. All of the instructors are Toro personnel except for representatives of pumping equipment manufacturers and several invited guests.

Tuition is $50 for three-day programs; $75 for four-day sessions; and $175 for the eight-day classes. No tuition is charged for college and university instructors.

For more details about courses of instruction, circle (719) on the reply card.

Green Industry Newsmakers

PEOPLE PLACES EVENTS

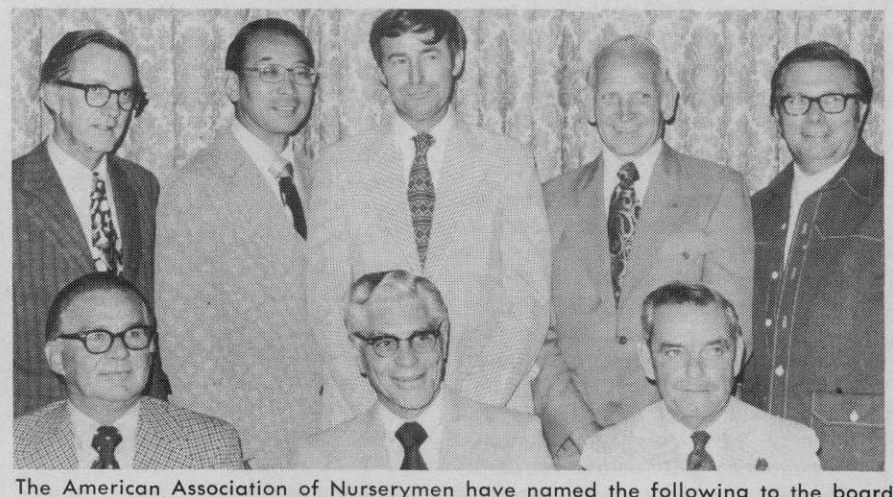


New officers of the Virginia Turfgrass Council are: (l-r) J. L. Kidwell, Culpeper, Va., president; Jack Henry, Richmond, Va., vice president; and Earl H. Odell, Chesapeake, Va., secretary-treasurer. New directors are W. P. Mooney, superintendent, Langley Air Force Base golf course, and David C. Harmon, superintendent, Golden Horseshoe and Spottswood Golf Course, Colonial Williamsburg.

J. C. "Jake" Jacobsen (l) turns over the keys of his Tehachapi turf growing grounds to R. W. "Wad" Young of Nunes Turfgrass, Patterson, California. Nunes assumes ownership and operation of the Jacobsen Turf Farms. The move gives Nunes broader market coverage of California.

Here's a typical early morning scene. Superintendent M. S. "Denny" Dennison (r) at Pines Country Club in Morgantown, W. Va., consults with spray operator prior to spraying greens for disease control. Constant checking on turfgrass conditions is part of the overall management needed by golf course superintendents.

Look closely at the building surrounding this operation. It's designed and built by Space Age Industries, Grand Haven, Mich. Construction is two-inch steel tubing bolted together in rugged trusses and support towers. Covering is snow fencing and experimental shade cloth. Location is John Zelenka Evergreen Nursery and the building covers 10 acres of seedlings and rooted cuttings.



The American Association of Nurserymen have named the following to the board of directors: Seated from left are Kenneth J. Altorfer, McKay Nursery Co., Wisc.; Harold S. Crawford, Willis Nursery Co., Kans.; Louis Hillenmeyer, Jr., Hillenmeyer Nurseries, Ky. Standing from left are Hugh Steavenson, Forrest Keeling Nursery, Mo.; Itsuo Uenaka, Cupertino Nursery, Inc., Calif.; Palmer W. Bigelow, Bigelow Nurseries, Inc., Mass.; L. J. Hilscher, Hilscher Nursery & Garden Center, Tex.; Ernest Tosovsky, Home Nursery Greenhouses, Inc., Ill.

IRRIGATION UNIVERSITY

(from page 29)

dustry.

Perhaps the best reason for training lies in a simply worded definition which Toro calls "the end result — *A properly designed sprinkler system, which, after being properly installed, and is properly operated, applies the exact amount of water over the entire area, will not require excess labor for operation and maintenance, will be economical in first cost, and consists of components that will not require rapid replacement.*"

Initially, the idea of training developed out of a unique test facility for sprinkler heads which was built behind the company's manufacturing plant in Riverside, California.

"We are dedicated to the basic proposition that it is the manufacturer's responsibility to research, design, test, to find new ideas and better ways to irrigate," says Edwin J. Hunter, vice president and general manager of the irrigation division of Toro. "We must then communicate our findings to those people who, in turn, have the responsibility to utilize our findings in the design and installation of better systems—systems that will be more efficient and will meet the challenge of water utilization and conservation."

Under that premise, Toro opened classes last semester to three groups of people: installers; landscape architects, engineers, sprinkler salesmen, park department employees, department managers, etc.; and distributor salesmen responsible in the total irrigation market. Course of instruction and course length have been altered slightly for this semester. Included for the first time are college and university instructors, golf course superintendents and other commercial turfgrass managers. (See Box, page 29)

The first year of teaching formed the building blocks for this fall and winter series of courses. Thus it would be well to examine the three groups of people who made up the original classes.

Installers: this group, more than any other, needed the greatest amount of training. In a business as simple and yet as complex as this, it is not surprising that the turnover rate among new installers is exceedingly high.

A man will become enthused with the idea of underground automatic sprinkler irrigation, invest a small fortune in time and money and then rapidly lose interest because he doesn't understand the total concept of system design, installation, selling, service, how to run a small business, how to advertise, etc. The course of instruction offered to the industry dispelled many of the fears and unknowns. Combining classroom and field work, instructors gave a highly intensified "cram" course.

Intermediate: "Students" in this category usually have had some training. They know the basics, says Bruce Camenga, Toro's professor of irrigation. What they need is additional information in new innovations such as the advantages of low precipitation, electric and hydraulic control, valve-in-head, etc. to understand how special features affect the overall cost of the system.

Advanced: Just as the new installer needs to know basics and the intermediate "student" is concerned with reduction in cost through new ideas, the advanced pupil desires greater knowledge of the marketplace itself. An extensive "seminar" was designed for the distributor salesman whose responsibilities in irrigation are market-wide. It was much more advanced, more technical and more market oriented than the other courses.

On the outside, this fall's courses of instruction appear to be a notebook and pencil affair. Don't count on it, though. "These courses are designed to get the student exposed to the greatest amount of knowledge in the shortest time," says Robert Landesman, director of marketing for the division. "Students actually install an irrigation system in the field. We expect them to physically dig in the ground and get dirt under their fingernails. We want them to completely understand every facet of the operation; to know how to problem solve a situation; to know the shortcuts and the various techniques about the job."

Like the recruit who is subjected to the rigors of military life and later turned into a fighting man, so the curriculum at Irrigation University takes the student and prepares him to accept the challenges of the field. Installers are taught drafting techniques, how to survey, types of sprinklers, sprinkler performance and spacing, application and selection, plumbing and electrical codes, drain valves, hydraulics and many other important concepts. They are then taken to the field and required to use this knowledge in installation of an irrigation system.

Training for intermediate students

(continued on page 34)

PERFECTLY PREPARED SOIL MIXES

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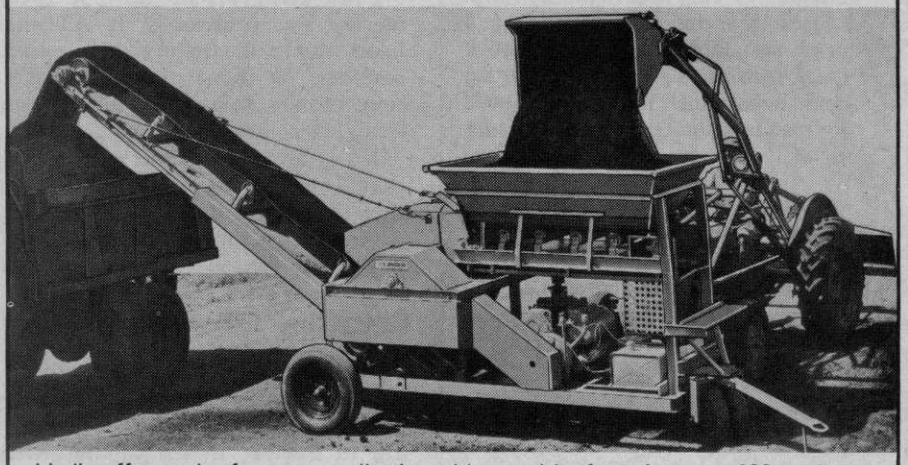

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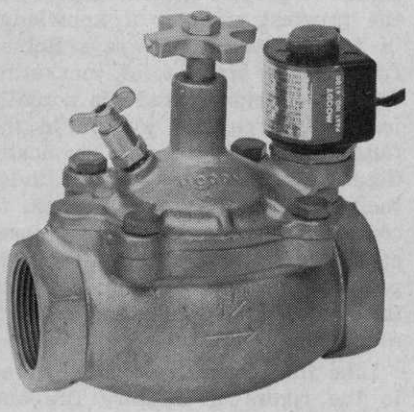

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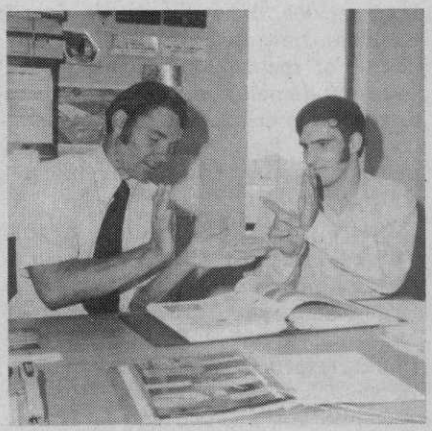


Professor Kinsey spent much time teaching me the basics of landscaping. Here we're solving an academic problem.

When a job was completed, the customer and I would review the work done and then sign the work order. Only then am I sure that the job is finished.

LABORER TO FORMAN

(from page 20)

learning had really just started. I would be constantly learning while in school. The internship could have been longer, but then it would have defeated the objective of the two year college.

Now as a "student of the textbook" again, I look back and reflect with appreciation on the opportunities I have been given. Dedicated arborists such as Larry Holkenborg deserve more than a letter of thanks. They deserve to be recognized for their foresight in helping people like myself become professionals like them. Perhaps that is the reason for this article.

I also believe that the help given me by my professors at ATI has been invaluable in my training experience. Without them, the concept of the two year college and earn/learn internship would never exist. If anyone has the opportunity that I have had, I sincerely hope that theirs will be as successful and meaningful as mine has been.□

Consulting Arborist Society Meets In Boston

The American Society of Consulting Arborists held its summer meeting in Boston, in conjunction with the International Shade Tree Conference. Over 75 members and guests were present at the breakfast meeting.

Keynote speaker was Nat Dunn of Memphis, Tenn. who described his experiences during the past 30 years with tree evaluations. He particularly related them to storm damage and how his clients fared with the Internal Revenue Service when claiming losses.

Dunn pointed out that in the IRS manual, casualties from wind storm, tornado, ice, etc., are related to property value before and after. Nowhere does it specify "resale" value. He further said that there are many "values" other than just monetary to be considered. They include shade, noise abatement and aestretic values.

He called ASCA member's attention to the fact that the IRS manual to its workers does say that no shade tree evaluation formula should be used. But it plainly points out that "replacement costs" are allowable, he said. He then based his claims on the costs of replacing the damaged trees as acceptable cost figures.

The keynoter said that the individual IRS agents may try to claim that two "real estate appraisers" must give values of "before and after." However, the IRS manual merely states that two "competent appraisers" give before and after valuations. Long time arborists with the knowledge of evaluating trees should surely qualify as "competent appraisers" in the eyes of the IRS when it comes to trees, he said.

Fred Micha, chairman of the case history committee, added to the story on tree-evaluation-and-the-IRS. He said that although the IRS manual specifies that the shade tree evaluation formula can not be used as such on private properties, it can be used on commercial properties.

Local arrangements for the breakfast meeting were made by Wilfrid Wheeler, William Rae and George Goodall, Sr. New England members of ASCA presented those present with jugs of maple syrup and cranberry sauce.

The annual meeting of the American Society of Consulting Arborists will be held in Tampa, Fla., Feb. 14-16.

—insect report—

TURF INSECTS

BROWN GARDEN SNAIL

(Helix aspersa)

NEW MEXICO: Immatures collected in yard at residence in Albuquerque, Bernalillo County. This is a new State record, and has been determined to be an established infestation.

FALL ARMYWORM

(Spodoptera frugiperda)

ALABAMA: Heavy and damaged several newly established centipede grass lawns in Linden, Marengo County. MISSISSIPPI: Larval migration into pastures heavy in Issaquena County. Growers should watch for this pest. Could be major problem due to heavy rainfall. ARKANSAS: Infestations economic, some pastures treated across southern part of State. Ranged 10-15 larvae per square foot in one pasture of Coastal Bermuda grass in Miller County.

SOUTHERN CINCH BUG

(Blissus insularis)

MISSISSIPPI: Damaged St. Augustine turf in southern counties. Heavy in Pike County.

BLUEGRASS BILLBUG

(Sphenophorus parvulus)

UTAH: Increased, caused extensive damage to lawns in Salt Lake and Davis Counties.

INSECTS OF ORNAMENTALS

NANTUCKET PINE TIP MOTH

(Rhyacionia frustrana)

KANSAS: Significant damage reported in pine Christmas tree plantings in Reno County.

CALIFORNIA TORTOISESHELL

(Nymphalis californica)

CALIFORNIA: Second-generation larvae severely defoliated shrubs, mostly ceanothus, in Placer County. First Generation defoliated several thousand acres of native brush. Adult flights very limited compared to 1972 when millions of adults were nuisance and hazard.

MIMOSA WEBWORM

(Homadaula anisocentra)

MARYLAND: Severe on mimosa and honeylocust statewide. ALABAMA: Larvae folding, webbing, and destroying much of foilage of mimosa and honeylocust statewide. MISSISSIPPI: Severe on mimosa throughout State. Seriously weakened some trees, contributing factor in death of others.

TREE INSECTS

FOREST TENT CATERPILLAR

(Malacosoma disstria)

PENNSYLVANIA: Damaged mostly red oak. Population collapsed in Somerset, Fayette, and Westmoreland Counties. Only 50 acres moderately to heavily defoliated in Somerset County, tree mortality ranged 1-5 percent over 550 acres in Somerset County near Fayette County border. This pest believed to be cause of 2,250 defoliated acres in past two years.

ELM LEAF BEETLE

(Pyrrhalta luteola)

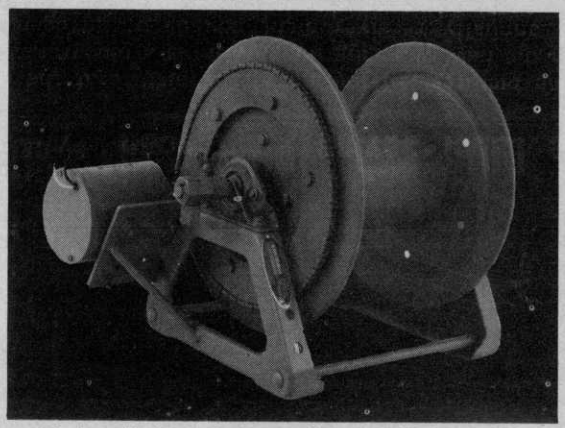
MISSISSIPPI: Damage to elms still heavy Statewide. TENNESSEE: Caused severe defoliation of elm trees in western area. MISSOURI: Complete defoliation of many Siberian elms occurred throughout southern and central areas. Heavy populations present statewide.

WHITEMARKED TUSSOCK MOTH

(Hemerocampa leucostigma)

WEST VIRGINIA: Larvae noted on Damson plum in Raleigh County. This is a new county record.

REELS to handle your spray hose



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Write for special discounts on 10 or more copies.

LEARN TODAY!

IRRIGATION UNIVERSITY

(from page 31)

includes some of the concepts above plus additional technical instruction. Factors affecting cost of the system, special features of components, programming, and installation (in the field) at more difficult to irrigate sites are thoroughly covered by course instructor, Bruce Camenga.

The advanced course for distributor salesmen looks in depth at markets including institutional, commercial and residential. It also teaches a man how to call on architects, installers, institutions and golf course superintendents. Special emphasis is placed on pump stations and service operations to which salesmen are regularly exposed. Again, practical field experience is stressed because Toro believes that getting a little closer to the dirt in the field will make a better salesman in the market.

"We believe in educating all those concerned about irrigation in the Green Industry," says Ed Hunter. "In a small way we can improve the environment by educating those who can pass knowledge on to others in the field. Whether they be an installer, an architect, an irrigation contractor or a foreign student, our goal is to broaden the knowledge of those who have a desire to learn more."

The need for training has already been pointed out. In a larger sense, however, the Green Industry today is confronted with a growing concern about conservation of our natural resources. Preservation of water resources is a big challenge. And industry, distributors and even the public are beginning to face up to the fact that conservation is a cooperative effort. □

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Specifications:

- 7000 lb. dump capacity
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Nine U.S. States, Canada Declare War On Pest

Scientists in nine states and Ontario, Canada, have combined forces in an all-out battle against soil insects that cost farmers and those in the Green Industry millions of dollars each year.

As of August 1, 1973, and for at least four years thereafter, researchers will look for ways to "manage" these pests without extensive use of pesticides.

The Environmental Protection Agency has contributed $300,000 and the Cooperative State Research Service another $185,000 to support the research in Missouri, Illinois, Indiana, Ohio, Nebraska, Iowa, Michigan, Wisconsin, New York, and Ontario.

The North Central Regional effort was developed and will be coordinated by Mahlon Fairchild, chairman of the University of Missouri-Columbia department of entomology. "We wanted a regional research project," he said, "because this is too big for one state to handle.

"If we're going to manage pests while minimizing damage to the environment, we're going to have to know more about these pests.

"Right now, our only weapons are pesticides, and many of these are being banned from use. Furthermore, pests are developing resistance to the pesticides we are using."

The value of the regional, interdisciplinary soil pest research effort was underscored by Dr. Richard J. Aldrich, director of the UMC agricultural experiment station.

"I'd much rather see us build a good research base now," he said, "rather than getting involved in expensive crash programs to try to stop problems after they are well underway."

Aldrich and Fairchild believe the projects will give each participant better research information than any could get if they took on he project alone.

"We intend to keep this research program going beyond 1977 and expand it to a nationwide effort," said Fairchild.

Fairchild started urging the multistate effort as government regulation of pesticides and more intensified culture of agriculture and ornamental horticulture made pest control extremely complicated.

All 300,000 EPA money for supporting the research comes directly to Fairchild who subcontracts and coordinates with the other states for research programs. The CSRS funding has been split up and sent directly to the states involved.

Cutrine-Plus Algaecide Registered By EPA

Applied Biochemists, Inc. has introduced a new algaecide—Cutrine-Plus—to its line of aquatic nuisance control chemicals. The product has been registered for use by the Environmental Protection Agency.

Cutrine-Plus is a major improvement from the company which pioneered chelated and complex copper algaecides. The product eliminates sulfates, has increased stability, reduces cost of treatment and is less corrosive.

It is registered for potable water supplies; fish, farm and fire ponds; lakes and fish hatcheries. Introduction of Cutrine-Plus was made in New Orleans at the Hyacinth Control Society meeting and has been featured at trade and consumer shows.

Two recent tests point to the product's effectiveness. While registered only as an algaecide, a Florida test found Cutrine-Plus more than 50 percent effective against the noxious weed hydrilla. In New Jersey, the product controlled curlyleaf pondweed.

It is expected that Cutrine-Plus will be available in granular form for control of chara and other bottom growing algae for the 1974 algae season.

Southern Ag. Chem. Assoc, To Hold Meeting

The Southern Agricultural Chemicals Association will hold their 19th annual meeting at Callaway Gardens, Pine Mountain, Georgia Oct. 28-31.

Dr. Charles Ellington, director of extension service, University of Georgia, Athens, Ga., will be the keynote speaker.

The main speaker will be J. Phil Campbell, Under Secretary of Agriculture.

industry people on the move

FRED N. CLUTE, promoted to vice-president operations and **RICHARD N. CROWL,** promoted to vice-president sales and advertising for Rhodes Chemical Company.

* * *

GERALD J. FLANAGAN, appointed treasurer, Velsicol Chemical Corporation.

* * *

JOE WHITE and FRED KAIN, named eastern and western field sales managers, respectively, for Davis Manufacturing, Division of J. I. Case.

* * *

ALI MARANDI appointed director of operations for Griswold Controls. He will have responsibility for company manufacturing, engineering and quality assurance programs.

* * *

GARY HOLLAND, appointed product manager for walking mowers for The Toro Company. In another company appointment, **JOHN SZAFRANSKI** becomes product manager of single and two-stage snowthrowers.

* * *

JOHN D. INGRAHAM, promoted to the newly created position of sales manager, Nalco-Trol Products, specialty chemicals group, for Nalco Chemical Company.

* * *

RAYMOND J. LEE, joined Thompson-Hayward Chemical Company as an agricultural sales representative. He will be calling on customers in SE Arkansas, NE Louisiana and NW/Central Mississippi.

* * *

GABOR von VARGA, appointed vice president international of Lockwood Corporation. He has been assistant to the president, Cenco Inc., Chicago.

* * *

JONATHAN T. PULSIFER becomes international sales manager for FMC Corporation's agricultural chemical division. He has been with the company since 1960.

* * *

WILLIAM R. HANLON, to manager agricultural/horticultural products for the construction products division of W. R. Grace & Co. He has spent the last 3½ years in London, England as marketing director for industrial service chemicals, a unit of the company.

* * *

JOE KUZYK becomes northeastern district sales manager for the Echo chain saw division of Kioritz Corporation. He will be working out of the Northbrook, Illinois office.

* * *

RALPH F. ANDERSON, elected vice president-research for Velsicol Chemical Corporation.

* * *

MARK KNOX, becomes manager Walmsley's "plantsation" garden center, a part of Environmental Services of America. He will be located in Chelmsford, Mass., a suburb of Lowell.

* * *

ROGER M. JACOBS and JULES J. JAEGER become technical field representative and sales representative, respectively, for Rohm and Haas Company.

* * *

JAMES R. NOVAK, named key account manager to coordinate sales of consumer products to national and direct accounts for The Toro Company.

TREES SHOULD BE FED EACH FALL...

Jobe's Tree Food Spikes

are the new way to feed trees for winter protection . . .

These spikes of high analysis fertilizer easily pound into the ground around trees. Rainwater does the rest.

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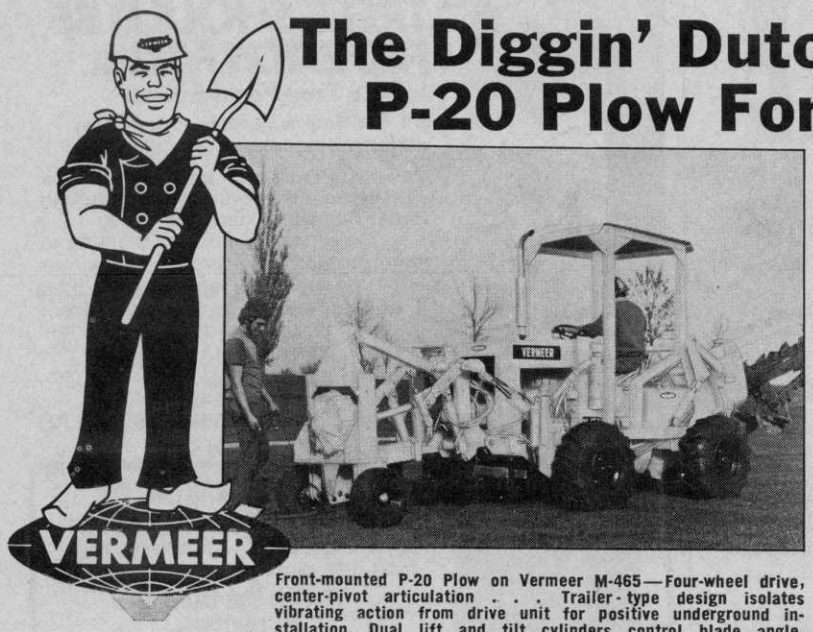
The Diggin' Dutchman Tested His P-20 Plow For Two Solid Years



Front-mounted P-20 Plow on Vermeer M-465—Four-wheel drive, center-pivot articulation . . . Trailer-type design isolates vibrating action from drive unit for positive underground installation. Dual lift and tilt cylinders control blade angle.

It's a fact . . . The Diggin' Dutchman's P-20 Plow spent more time on test plots than some companies have spent making plows! But it's paying off. Today, there isn't a machine in its class that can outlive or out-plow the P-20 as a front-mounted or rear-mounted unit. We proved it last year; we're proving it again in '73. Unique trailer-type design makes the difference, buries cable down to 30" deep (standard); all-hydraulic, 8-attachment versatility makes it profitable; and the heavy-duty frame and massive weight on both M-465 and M-470 units make it embarrassing for competition. Interested? Write The Diggin' Dutchman or call him (515/628-3141) for a FREE demonstration. Vermeer Mfg. Co., 7210 New Sharon Road, Pella, Iowa 50219.

THE DIGGIN' DUTCHMAN
VERMEER TRENCHER-PLOW DIVISION

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The Labor-Saving Plant Food

By DR. ROBERT W. SCHERY Director, The Lawn Institute

The pictures tell the story. The picture at the left with the lady watering the flowers is a bluegrass lawn that annually receives eight pounds of nitrogen per thousand square feet. All of it is applied as Blue Chip ureaform (UF) at one time toward the end of summer.

The picture at the left was taken in the same yard but with a different fertilization program. This section received only soluble nitrogen. It has been fertilized both in spring and in late summer. Total nitrogen was halved to two pounds (4.6 lbs. of urea) per application.

The difference can be noted in an imaginary line where the finger is pointing. There are "thin" patches of discolored grass that have been severely afflicted with leafspot and "summer brownout" because of overly lush growth following the late April fertilization. After a May flush of foliage, this section remained semi-starved through summer, and has not yet had its late summer feeding.

The area treated with ureaform is in the third year of this program. From the first grass growth, the turf has been uniform, without the flush of "soft" growth experienced in the companion area.

By 1972, delayed release from the applications of earlier years was beginning to feed back. The fertility response through summer was more reliable than in the previous two summers.

J. T. Hayes of Hercules, Inc., has published information indicating that about 65 percent of UF nitrogen is mineralized the first year, 25 percent the second year, and 10 percent the third year. The persistent use of UF for three years builds up nitrogen release to nearly 100 percent feed back the third year and thereafter.

It is not my intention to belabor the merits of gradual-release fertilization. Its usefulness has been well substantiated for turf, and it is becoming increasingly recognized for ornamentals, garden vegetables and woody plants. Any use in which the slow feedout of nitrogen is advantageous should profit from UF IBDU and other "slow release" nitrogen sources.

For more details, send a self addressed stamped envelope to: The Lawn Institute, Route 4, Marysville, Ohio 43040. Ask for reprints: Perspectives on Golf Green Fertilization, and All-Purpose Fertilizer Suits Roses to a Tea.

ARBORIST SHOP TALK

By Hank Harvey Jr.

Rutledge, Pennsylvania

Shortcuts For Tree Men

"Shortcuts" is a word with bad overtones in a business as hazardous as ours, but not all shortcuts are dangerous. Most "tricks" of any trade are essentially shortcuts . . . more efficient ways of doing the same job with less effort or in less time.

Let's face it. We all know guys who've been doing some things over and over again the hardest, slowest way, year after year. Experience may be the greatest teacher, but unfortunately it doesn't always have the best pupils.

Here are a few simple common sense short cuts passed on by some experienced students of the trade. They are worth trying:

When taking down a tree on a nice lawn you can save time and minimize damage by cutting up the limbs as they come off into about 4 to 6 ft. lengths and placing them perpendicular to the intended path where the trunk will be felled. This will prevent the trunk from "trenching" or gouging into the lawn and will help prevent a big dent in the ground from the heavy trunk.

It will also serve to elevate the trunk so it can be cut up without any chance of cutting into the ground with your saw. A wider cushion area can be made by placing the logs in an alternating or staggered pattern so that the log ends overlap about ⅓ of their length. Stack your brush in the line-of-fall also for added cushion.

Working on a busy street and want to sell or unload for free some firewood? Cut it into fireplace length as you work and keep stacking it between the curb or pavement or in front yard near the street. You'll get customers! If it's more than a one day job and you want to dispose of it just stack it near the curb, chances are excellent that it will all be gone by morning.

If you do sell wood off the job, sell it cheap, you'll sell more and that beats hauling it. Besides you can get a lot of new tree customers that way.

Then there's the limb-over-a-wire-technique that's obvious once you see it done, but few practice it. Briefly stated, it's this: Many limbs over wires, especially telephone wires can be removed simply and without rigging, just by doing it in two steps with the help of the ground man.

Have him throw a dry manilla rope over the wires (or use the hook on back of your pole saw) and pull them towards the tree trunk. You should get a 3 to 5 foot pull depending how much slack is in the wires. Climber (or other ground man using a pole saw) then cuts off the end of the limb.

Now pull wires the other way (they should clear point where first cut was made by 2 to 3 ft.) Now cut the rest of limb off flush. Both pieces should fall safely to ground with no danger of falling on wire . . . and, no ropes! Be careful, though, about those wires. It's best to determine what type of power is being transmitted. Call the Utility Company!

First best, we'll admit, is a good soaking rain. But an underground system using Certain-teed PVC pipe comes in second to nothing else.

Economy. The overall installation cost is less. Lightweight PVC requires no special handling machinery. Joints are quickly and easily made. You get a choice of FLUID-TITE™ double-gasket joints, or deep-socket, solvent-weld joints. Fast installation saves money.

No maintenance worries. In the ground, PVC pipe is inert. It won't corrode, rot, or rust. Joints don't leak. And non-metallic PVC never needs protection against electrolytic action.

More water for less pressure. Smoothbore PVC is free of bumps and other obstructions that could hinder water flow.

Pays for itself quickly. Because you spend less to install it, and practically nothing to maintain it. And you save because one man can easily handle a PVC system.

Get it all from your Certain-teed distributor. Including PVC fittings and all the expert supervision you need. If keeping the turf watered and green is your responsibility, specify Certain-teed PVC. You'll never have a big tournament called for lack of rain. For complete information, write: Certain-teed Pipe & Plastics Group, Valley Forge, Pa. 19481.

Pipe & Plastics Group
CERTAINTEED

meeting dates

Central Plains Turfgrass Conference, Manhattan, Kans., Oct. 17-19.

Turfgrass Equipment & Materials Educational Exposition, 13th annual, sponsored by Southern California Turfgrass Council, Orange County Fairgrounds, Costa Mesa, Calif., Oct. 17-18.

Wisconsin Golf Turf Symposium, eighth annual, Pfister Hotel, Milwaukee, Oct. 24-25.

Southern Agricultural Chemicals Association, 19th annual meeting, Callaway Gardens, Pine Mountain, Ga., Oct. 28-30.

Turf and Landscape Irrigation Conference, Northern California Turfgrass Council. Asilomar Conference Center, Pacific Grove, Oct. 28-30.

California Council of Landscape Architects, annual meeting, Ahwahnee Hotel, Yosemite Park, Calif., Nov. 2-4.

Michigan Pesticide Association, fall conference, The Olds Plaza, Lansing, Mich., Nov. 7-8.

Washington State Weed Conference, Cosmopolitan Chinook Motel and Tower, Yakima, Wash., Nov. 7-9.

Penn-Del Chapter, International Shade Tree Conference, general meeting, Marriott Motor Hotel, Philadelphia, Pa. Nov. 8.

University of Georgia Turfgrass Short Course, 4th annual GGCSA, Center for Continuing Education, Univ. of Ga., Nov. 12-13.

American Society of Agronomy, Las Vegas, Nev., Nov. 12-15.

Colorado Crop Protection Institute, 3rd annual, Colorado State University, Fort Collins, Colo., Nov. 14-15.

New Jersey Federation of Shade Tree Commissions, annual meeting, Haddon Hall Hotel, Atlantic City, N.J., Nov. 17-19.

North Central Weed Control Conference, annual meeting, Sheraton-Jefferson Hotel, St. Louis, Mo., Dec. 4-6.

National Agricultural Aviation Association, 7th annual conference, Diplomat Hotel, Hollywood, Fla., Dec. 5-8.

Western Association of Nurserymen, trade show and 84th annual meeting, Plaza Inn, Kansas City, Mo., Jan. 6-8.

Tennessee Turfgrass Association, annual conference, Roger Millers King of the Road Motor Inn, Nashville, Tenn., Jan. 7-8.

Northeast Weed Science Society, annual meeting, Holiday Inn, 18th & Market St., Philadelphia, Pa., Jan. 8-10.

Kansas State Shade Tree Conference and Kansas Arborist's Association, annual meeting, Student Union, Kansas State University, Manhattan, Kans., Jan. 8-9.

Michigan State University-Michigan Pesticide Association, weed workshop, MSU campus, East Lansing, Mich., Jan. 9-10.

New York State Arborist Association, annual convention, Raleigh Hotel, So. Fallsburg, N.Y., Jan. 13-16.

Michigan Turfgrass Conference, 44th annual, Kellogg Center, Michigan State University, East Lansing, Mich., Jan. 15-16.

New Hampshire Turf Seminar, Sheraton Wayfarer Motor Inn, Bedford, N.H., Jan. 17-18.

EDITORIAL *(from page 6)*

sponsibility to support, nuture and help make these groups grow and thrive. Ignorance of meeting dates, dissatisfaction with the governing group, inordinate distance to travel, hotel accommodations, and other reasons are but lame excuses which satisfy only the people who make them.

Any well-known national organization today didn't gain it's prominence by member laziness and platonic attitude. It's people in attendance; people in action for a united effort; people who desire to make the organization meaningful, and people who have the fortitude to stand up and be represented. That's what Green Industry associations need. And it's about time we started recognizing the fact that without people, associations will fold. What have you done for your association this year?

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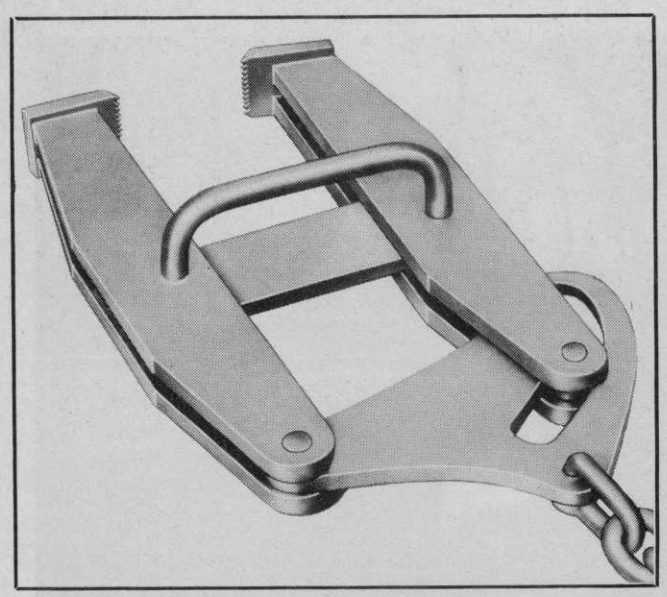
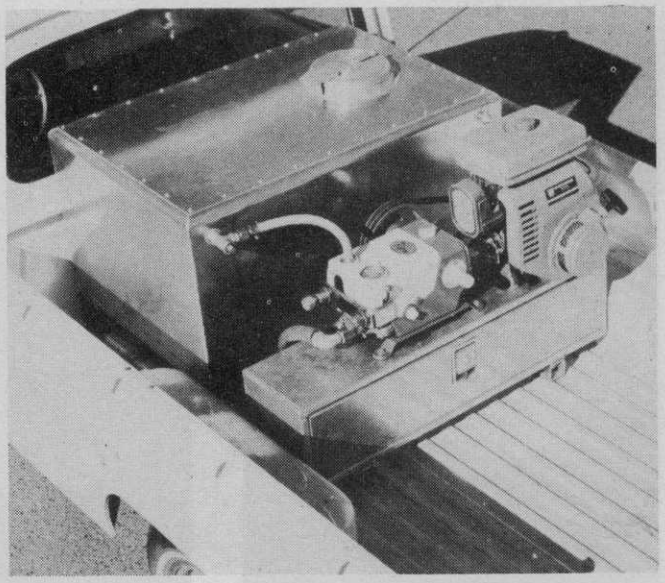


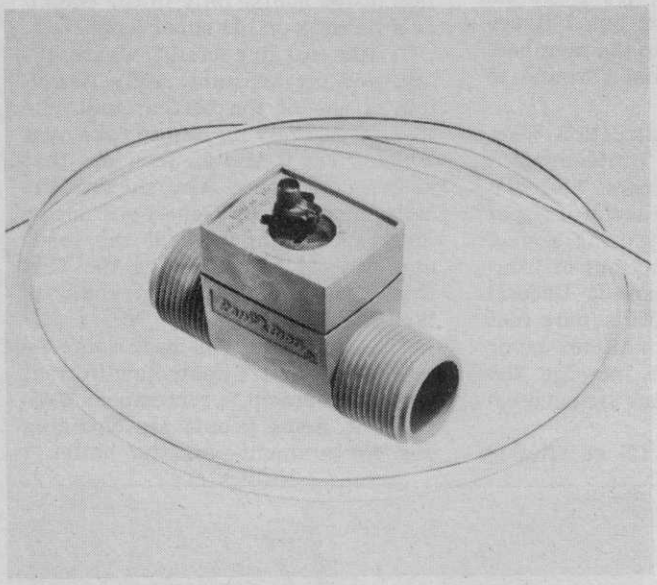
PALLIGATOR: Pallet Pullers, Oakland, Calif.

Here's a quick way to remove pallets from trucks, or move pallets at the front of trucks to the back. It is a one man operation. Unit utilizes an activated jaw which grips the center 2x4 of the pallet. It has only three moving parts. Pulls pallet either straight or sideways. Total weight is 14 pounds. For more details, circle (701) on the reply card.



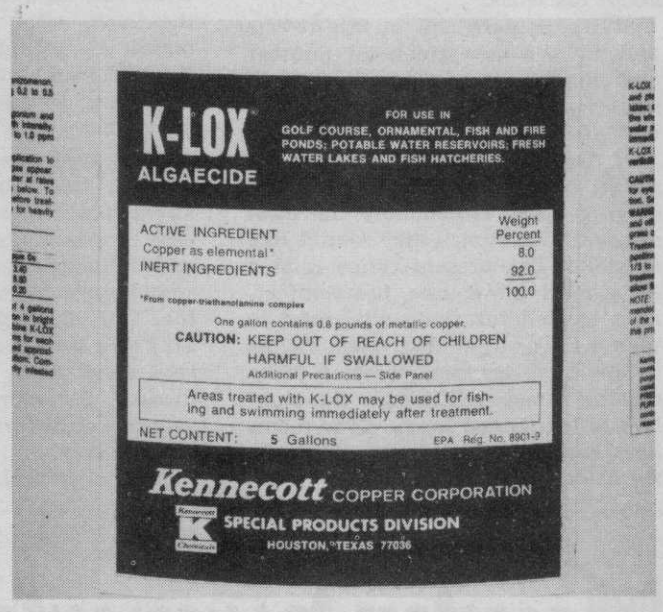
PORTABLE SPRAYER: Terminator Products, Oakland, Calif.

Spraymate 8 is a lightweight unit — 169 pounds — specially designed for weed and insect control spraying. An 8 gpm pump with working pressures up to 600 psi forms the heart of the self-contained system. It is powered with a 4.6 Hp gas engine. Tank holds 100 gallons and is constructed of aluminum alloy. Engine and pump sits atop a locking tool box. Unit is easily mounted in a pickup truck. For more details, circle (702) on the reply card.



FERTILIZER INJECTOR: Rain Bird Sprinkler Mfg. Corp., Glendora, Calif.

Easy to install and adjust, this new fertilizer injector is ideally suited for applying fertilizer to turfgrass areas through existing underground sprinkler systems. It's available in two models, F-100, 1 inch by 1 inch and the F-075, ¾ inch by 1 inch. Unit is made of non-corrosive PVC and comes complete with a 36 inch plastic vacuum tube, screened at one end to prevent debris from entering the system. For more details, circle (703) on the reply card.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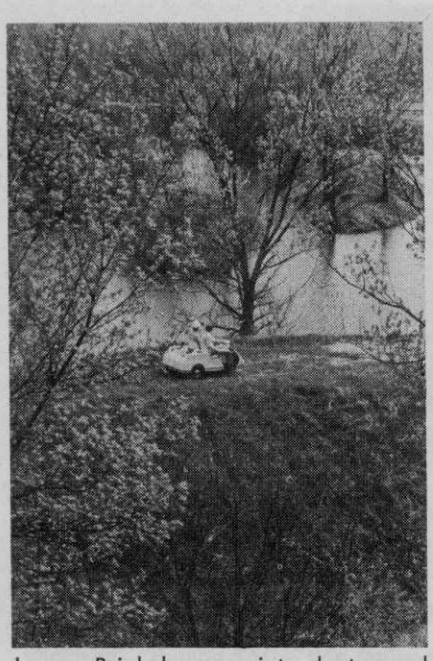

Larry Brinkel, superintendent, and inspect an area which has not yet been developed. Plans call for landscaping the area to conform to the natural terrain.

One of Larry Brickel's plans for the future calls for a driving range located on this spot overlooking the lake and clubhouse. Members will drive the balls into the lake. He plans to use floating golf balls and retrieve them when they float in to the bank.

USED STRIP MINE?

(from page 10)

old superintendent from Mammoth Springs, Arkansas, is so enthused about his work.

"I'll eventually fill in this ravine and make a new green for number eighteen," he says. Over there we'll haul top soil in and make another new green for the number five hole."

"I also plan to put in a driving range beside the clubhouse." The driving range is probably the most unusual alteration Larry would like to make. The present range is at a far end of the course, not comfortably located for those who need to take a kink out of their back swing.

"We have an ideal location for a driving range right beside the clubhouse," explained Larry. "The members can drive the balls right into the lake."

"When asked about collecting the golf balls, "Brickel ingenuity" prevailed again. "That's the simple part. If we use floating golf balls, the wind will blow the balls right up to the bank; after that, it's a simple matter of netting them out. I figure this will be a service to the members and bring in additional revenue to the club as well."

Along with new construction, Wee-Ma-Tuk faces similar problems that affect most other courses. "Our disease problems are primarily leafspot and dollarspot, but by using a good spray program, we stay out of trouble. Our basic program is Daconil 2787 at a 3 oz. per 1,000 square feet rate every week if conditions favor disease. Sometimes I increase the rate to 4 oz. if conditions are severe," states Larry.

"The next problem I'll go after is Poa Annua. I've had excellent results with Dacthal in controlling crabgrass and I plan to use a fall application for poa on all the tees."

Larry doesn't attribute the condition of the course only to the chemicals he uses or his supervision.

"I like to give credit where it's due, and my assistant, Andy Hamilton, is one of the best around," he says. "I can rely on him to take over when I can't, and believe me that makes a difference. Also, the grounds crew, managed by Gene Ford does a great job taking care of the roads and general areas. That's the first thing you see when you come to Wee-Ma-Tuk."

The next time you hear someone say, "Man doesn't know how to treat his environment," remember Wee-Ma-Tuk. Some people are changing our environment—for the better.□

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By that time, we will know the number of people to be attending and will try to accommodate all. Please send in your reservation now. No Charge for the SNEAK Preview Course or for the meals.

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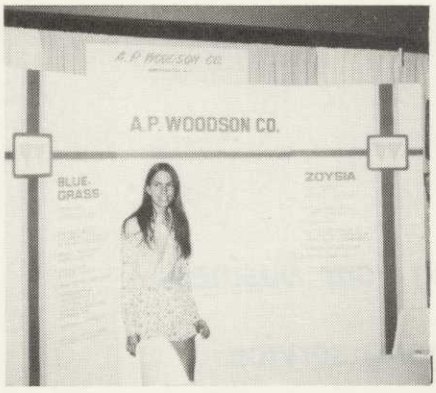

WEEDS: Cathy Stadelhofer, A. P. Woodson, Co. helps people with turfgrass weed problems.

TREES: Chuck Cissel (l) and Walt Money (c) discuss tree care with Elwin Deale, U. of Md. and Francis Lay, Arlington county, Va.

AND TURF: Bill Robinson (l) extension entomologist, VPI, and Ashton Ritchie, agronomist, National Turf Service, Inc. were ready with the answers to turfgrass questions.

Tysons Corner "Happening" Draws 120,000 Visitors

About 120,000 people passed by 34 displays of the Metropolitan Horticultural Happening at Tysons Corner international shopping center in McLean, Va. during one day in early August.

What they viewed were commercial exhibits from any segments of the "Green Industry." Tree care firms, nurseries, lawn care businesses and general horticultural displays attracted and kept the attention of passerbys throughout the day. Of particular interest were the educational booths set us by various groups including the United States Department of Agriculture (USDA), the University of Maryland, Potomac Rose Society and others.

One favorite was the "sick plant clinic" manned by the county agricultural extension agents of the Maryland and Virginia counties surrounding and including Washington, D. C.

The Metropolitan Horticulture Happening was the result of a team effort spearheaded by Francis Lay, Arlington county extension agent. The event was designed to bring a great variety of garden oriented information to a public that has been keenly aware of their role in improving their home environments.

Among the exhibitors for the day was Guardian Tree Experts, Inc., of Rockville, Md. "The interest expressed by the people who came past the exhibits was phenomenal," said Walt Money, president of Guardian Tree Experts. "We selected an enclosed all-weather shopping mall for the 'happening' most of the people came from northern Virginia.

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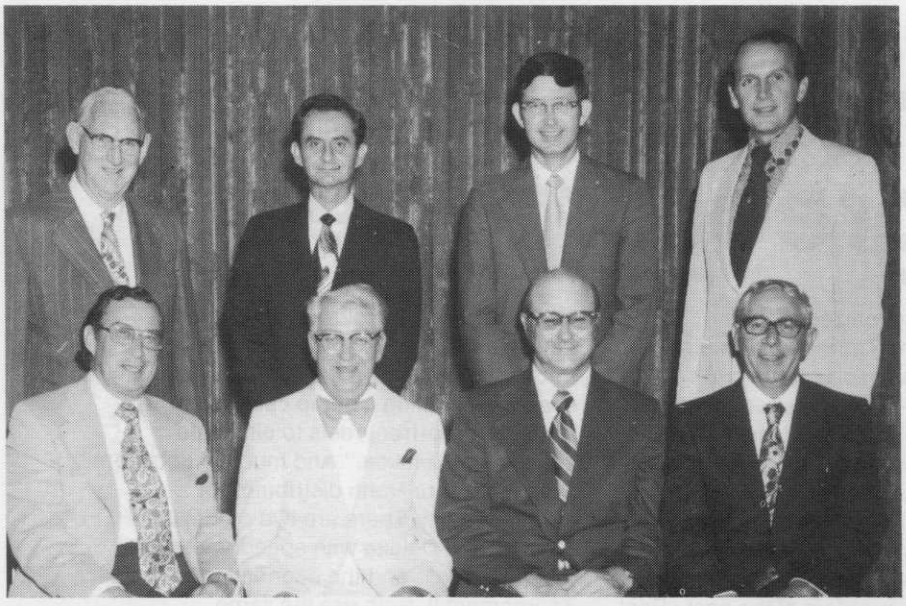


ISTC officers for 1973-74 are: (l-r standing) L. C. Chadwick, exec. director emeritus; E. B. Himelick, exec. director; Dan Neely, editor; Cal Bundy, exec. secretary; (l-r seated) John Z. Duling, president-elect; F. L. Dinsmore, president; ohn Weidhaas, Jr. past president; and Jack R. Rogers, vice president.

ISTC REPORT

(from page 27)

transmission lines will be constructed on 1½ million acres of right-of-way each decade for the balance of this century," he said.

He appealed for proper route selection and accepted procedures on rights-of-way clearing to make transmission lines more compatable with the environment. He also suggested that general practices such as vegetation screens and utility access roads be adapted nationwide.

Panel moderator, Richard E. Abbott, supervisor right-of-way maintenance, Ohio Power, Canton, Ohio then called on Robert D. Palmer, Dayton Power & Light, Dayton, Ohio to discuss the air curtain destructor. Palmer described the brush destructor as the circulating of air over a fire pit with clean products of complete combustion emitted. This is not necessarily so, he said. There is smoke and burning particle emissions.

He pointed to these disadvantages of the machine: 1. a property owner's refusal to allow the pit to be dug; 2. environmental consequences, meaning soil disturbance, soil condition and pit location; 3. safety hazards, should the pit cave in.

Palmer said that he is convinced that "when the total impact on the environment is actually measured, open burning of seasoned brush piles will prove to be less damaging to the environment and future ecology of the immediate area than the operation of an air curtain inicinerator."

During the morning session of the municipal arboriculturists, Jack Rogers, superintendent of street trees, City of Los Angeles, discussed the topic "Should We Plant Trees Along Our City Streets?" Rogers said no. Trees planted along standard streets are a hold-over from the days of the horse. With today's number of vehicles, people and services all competing for the street and the adjacent tree lawn, the tree is at a decided disadvantage. It has little chancei of survival.

Rogers proposed that tree planting easements be secured, the same as those used by utility and sewer companies. "This will place the tree outside the roadway and some distance from the conflicting elements," he said.

In the session of commercial arboriculture, Dr. David R. Houston, research plant pathologist, Northeast Forest Experiment Station, Hamden, Pa., reported on "Dieback and Decline — Diseases Initiated By Stresses, Including Defoliation." Dr. Houston said that stress refers to environmental pressure which brings about changes in a tree's physiology, form, or structure and predispose it to invasion by organisms which a tree normally can resist.

He said that dieback-decline was a progressive disease condition begun when trees are altered initially by stress and continued through the invasion of organisms of "secondary action." Examples of dieback were reported in ash, beech bark, and defoliation initiating decline in sugar maple and oak.

Dr. Houston said that ecological relationships are playing a bigger role in tree decline. Where areas have been defoliated by gypsy moth year after year, the incidence of decline is greater than elsewhere, he said.

He concluded his remarks by saying that "the incidence and severity of the dieback-decline disease will continue to increase as the number and diversity of stress factors increase with our expanding urbanizing society."

New officers for 1973-74 year are: F. Lewis Dinsmore, Dinsmore Tree Service, St. Louis, Mo., president; John Z. Duling, Duling Tree Expert Company, Muncie, Ind., president-elect; Jack R. Rogers, superintendent of Street Trees, City of Los Angeles, Pasadena, Calif., vice-president.

Awards presented at the annual banquet on the last evening of the convention included: Award of Merit, Keith L. Davey, Belmont, Calif.; H. N. Engledow, Indianapolis, Ind.; and Albert W. Meserve, Danbury, Conn. Honorary Membership, Dr. Samuel Ayres Jr. M. D., Los Angeles, Calif. Honorary Life Membership, Henry Vaughn-Eames, Stockton, New Jersey; C. Elmer Lee, Rosemead, Calif.; and Philip L. Rusden, Greenwich, Conn.

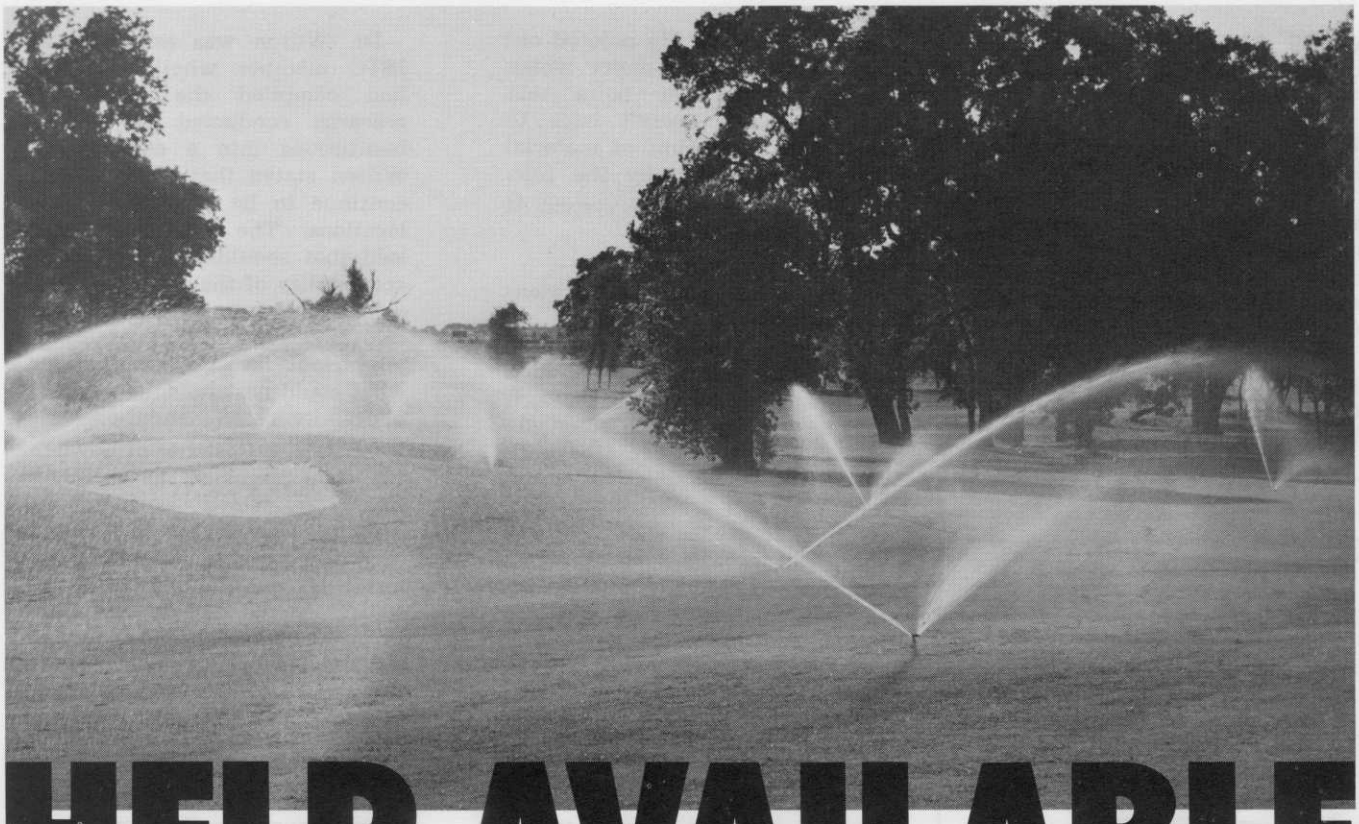
Next year's convention dates are Aug. 18-22. This will be the golden anniversary of ISTC. The 50 year celebration will be held at the Marriott Motor Inn, Atlanta, Ga.

Oregon Seed Trade Assn. Grants $3500 In Scholarships

The Oregon Seed Trade Association made scholarship grants to Oregon State University and Linn Benton Community College totalling $3,500.

Firms assisting in the grants are Berger Plate, Derry Warehouse, Western Seed, International Seeds, Jenks-White Seed Co., Mid-Valley Agricultural Products, Normarc, Northrup-King, Lee Olsen, Pacific Supply Coop, Pickseed West, and Wm. K. Wiley Co.

Chairman Lee Olsen announced the grants. Serving on his committee were Russell Stark, Richard Bailey, and James Carnes. Recipients were Ronald Cook, Canby; Cathy Arms, Rickreall; James Van Leeuwen, Halsey; Mark Dickman, Silverton; John Flanagan, Junction City; Lyman Lacy, Tangent, and Charles Gregory, Lebanon.



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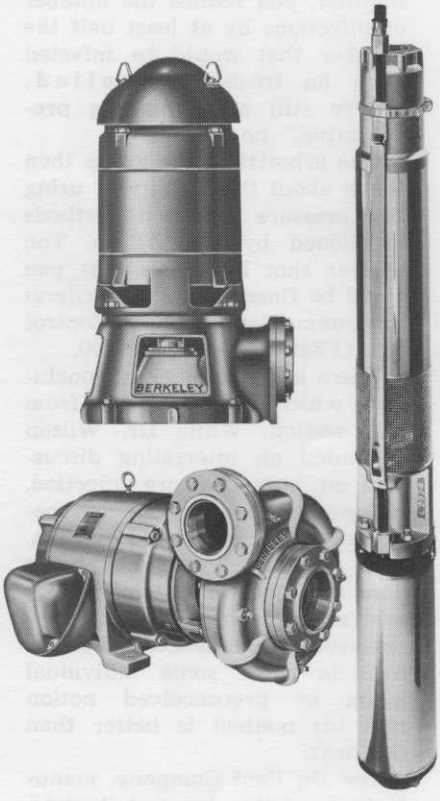

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NEWS AND OPINION

(from page 25)

said. "We haven't had good solid data to show how it works."

It would seem that his conclusions on high pressure injection are not founded on a broad base of data, but rather on limited research as conducted with available research grants.

Dr. Wilson then named several systems which have been experimentally tried in the U.S. and Canada. They are:

Davey System: He pointed out that it has a flow meter which is good from the point that the applicator doesn't have to measure the amount of material actually taken up by the tree.

The Stoneville, Miss. system. It uses old freon bottles.

SIReservoir system.

The plant pathologist mentioned the Mauget injector as another system and said that "this is the only one that is labelled and can be used." He said it makes use of Benlate fungicide as a wettable powder (the only formulation available from the manufacturer) which settles out. He then showed a slide taken at close range of the Mauget cup which showed Benlate residue in the bottom. He inferred that this was a negative attribute to this gravity flow system. However, as most plant pathologists know, only a very small amount of the material (less than 3 parts per million) is needed to control the disease. Residue in the bottom of the cup may be more a visual problem than one of no chemical uptake.

At the conclusion of his talk, delegates asked many questions. One was, what research has been done on tree wounds caused by high pressure injection. Wilson said that there is a lot of callus growth around the holes. There have been some reports of burning around the point of injection, he said, particularly when Benlate was solubilized with lactic acid. Wilson reasoned that the fact that you are using a fungicide should give some disease control of other diseases that would cause rot in the area near the hole. This would probably be true if Benlate had activity against these diseases. Wilson gave no answer about those diseases not controlled by the systemic fungicide.

Another question asked was about the solubility of the benomyl molecule. Eugene B. Himelick, ISTC executive director, answered it saying that it was 10 ppm soluble. He was immediately corrected by Dr. T. C. Ryker who pointed out that Benlate is soluble at one-to-two parts per million.

One delegate then asked for a show of hands of arborists in the room who had used Benlate and were satisfied with the results. Roughly 80 people raised their hands indicating satisfaction with the product.

Dr. Wilson was asked by an ISTC member whether anyone had compiled the results of research conducted by various institutions into a central file. Wilson stated that research will continue to be done at various locations. The gentleman then said that shouldn't it be the responsibility of the government to collect the information? Wilson said that research was continuing at various locations to find out what could best be done to make a definite recommendation.

Dr. Arthur Costonas of Lowden, Inc. then discussed the antibiotic Nyastatin which Lowden has been developing for the control of DED. He said it offered interesting possibilities into the control of the disease, but hesitated to comment much further than that. It would seem that the audience was left somewhat in the dark about exactly what the product was and exactly how it controlled the disease.

Dr. T. C. Ryker, who recently retired from the Du Pont Company, next discussed foliar applications of benomyl for DED control. He said that the basis for the label of Benlate benomyl (foliar application) was due to data submitted. This data came from Wisconsin. "You get registration where you have data," he said. Dr. Ryker said that in the tests with which he was familiar, you reduce the number of infections by at least half the number that would be infected were no treatment applied. "We're still only thinking preventative," he said.

One arborist in the group then asked about the legality of using the pressure injection methods mentioned by Dr. Wilson. The answer shot back was that you could be fined under the Federal Environmental Pesticide Control Act (FEPCA) up to $25,000.

There are a number of conclusions which could be drawn from this session. While Dr. Wilson presented an interesting discussion on high pressure injection, no one can use this method because it is not registered by EPA.

In addition, research being done on injection systems has no central gathering point. Everyone seems to be headed off on his own to solve some individual whim or preconceived notion that his method is better than the next.

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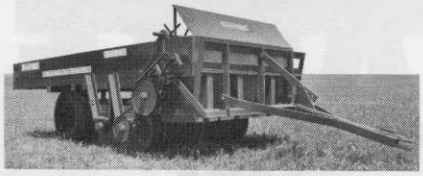

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has not indicated sufficient interest in Benlate for DED control or in the process of solublizing the product. Few, if any, research dollars are being invested by the company to investigate the problem and find the answer to the many, many questions.

Moreover, most firms appear to be totally in the dark about what they are doing. Many are operating first on a blind hunch that their method will work, and second on finding data to substantiate their claim.

Perhaps the only firm to actively investigate the potential of Benlate for DED control has been the J. J. Mauget Company, Burbank Calif. It has a vested interest in sales of the Mauget injection process and thus has invested many dollars to prove or substantiate what it says.

Four Part Course Features Lawn And Grounds Care

A training course on all phases of lawn care and grounds maintenance will be offered in several major cities nationwide soon.

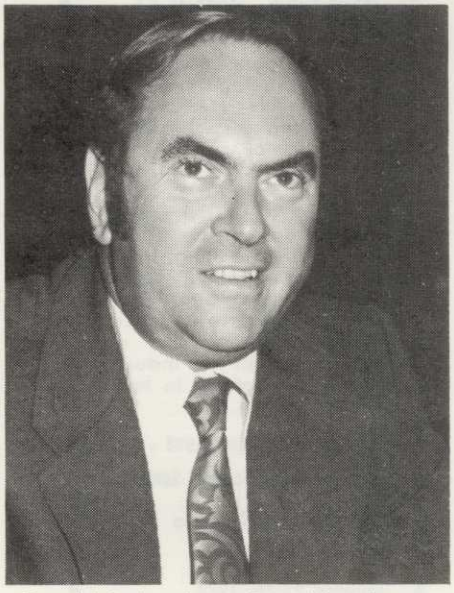
Course instructor is Donald J. Arenberg, Consulting Agronomists, Lincolnwood, Ill. He has been engaged in the contract application business and is currently a consultant to several firms in the Green Industry. His course of instruction is directed to successful management techniques as they apply to those directly concerned with the lawn care, contract application and grounds maintenance business.

According to Arenberg, the course is designed to teach the latest methods, techniques and concepts, along with the uniquely new and proven products and equipment to give professional results in the least amount of expense, effort and time.

Training is designed for anyone engaged as purchasing agents, superintendents, foreman and others working in the maintenance of grounds areas. The course is in four parts: lawn care; tree and ornamental care; weed control; and professional techniques that get results.

Course duration is three days. All material presented is on an "eye to eye" basis, said Arenberg. "There are no complex technical terms. And the participant does not need to know chemistry, physics, botany, math or any other technical background. Training manuals will be given to the student along with special purpose diagnosing equipment and measuring devices. In addition, samples of products will be given to students."

Registration for the course is $310. This includes manuals, equipment, lunches, coffee breaks, refreshments, and course instruction. Overnight accomodations are not included. Those registering early are permitted a $60 discount. For more information and details, circle (720) on the reply card.



Donald J. Arenberg, Consulting Agronomists, Lincolnwood, Ill.

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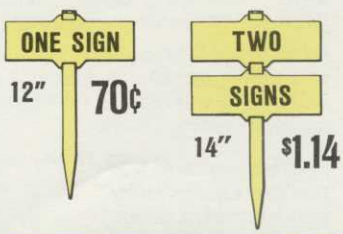
ROPE: $25.00 per thousand feet



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Groundwater Pollution Course Slated For Early November

An intensive three-day course in "Groundwater Pollution," directed toward professionals working in the water resources field, will be given at the Commodore Hotel in New York City, November 6-8, 1973.

The course is being offered as a continuation of the successful Water Resources Engineering Educational Series presented by University of California Extension and the University of California College of Engineering at Berkeley. Attendance at the course will be limited to 250 individuals.

Arrangements for the presentation have been made by the university in cooperation with Geraghty & Miller, Inc., consulting groundwater geologists and hydrologists, Port Washington, New York. The program is designed with special emphasis on pollution of groundwater in the northeastern states, where public agencies are becoming increasingly concerned about the deterioration of this vital resource.

Speakers and panel discussions will cover the fundamentals of groundwater pollution as well as methods for abatement and control. Specific instruction will be given in the causes and types of groundwater pollution resulting from man's activities, including chemical, radioactive, biological, and agricultural pollution.

David K. Todd, Professor of Civil Engineering and Chairman of the Division of Hydraulic and Sanitary Engineering on the Berkeley campus, is the course director. Professor Todd is the author of "Ground Water Hydrology," "The Water Encyclopedia," and many other publications in the water field.

Advance enrollment is required, and early application is advisable because of the strict limitation on the number of attendees. Applications may be made by individuals or organizations, and each enrollee may assign one substitute to cover any session he may miss. The fee of $185 per person covers all sessions, luncheons on the three days, and special course notebook containing reference materials and expanded outlines of the lectures.

Requests for additional information, registration and special hotel accommodation rates, should be addressed to: Continuing Education in Engineering, University Extension, University of California, 2223 Fulton Street, Berkeley, California 94720. Telephone: (415) 642-4151.

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SOUTHERN WEED SCIENCE SOCIETY

Come to Atlanta in January to participate in the 27th annual meeting of the Southern Weed Science Society. Speakers will discuss all aspects of weed science. Interpretation of the Federal Environmental Pesticide Control Act as it affects applicators will be a highlight of the meeting. In addition, sections will be devoted to agronomic crops, aquatic weeds and special weed problems, new developments in the industry and weed control in horticultural crops.

You are invited to attend . . .

Southern Weed Science Society

Sheraton Biltmore Hotel

Atlanta, Ga.

January 22-24, 1974

— classifieds —

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: "Position Wanted" 10¢ per word, minimum $3.00. All other classifications 20¢ per word, minimum $4.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment. Boldface rule box: $25.00 per column inch.

POSITIONS WANTED

SALES REPRESENTATION: Washington, D.C. (Government), Virginia, Maryland, and Deleware. Seasoned sales organization can handle equipment, turf related chemicals, or specialties. We can tailor our marketing capabilities to meet your needs. W. H. Chadbourne, Agronic's, Inc., 10818 Fairchester Drive, Fairfax, Virginia 22030. Phone 703 471-9660.

HELP WANTED

AGRICULTURAL CHEMICALS SALES SPECIALIST

We are seeking an energetic and personable sales professional with 3-4 years proven experience in selling agricultural chemicals, for an opening in the Northeastern States.

Position requires a B.S. degree in general agriculture, agronomy, plant pathology or entomology. Individual should be marketing and sales oriented to assist distributors in developing sales programs, advertising and manufacturing.

Send resume and salary requirements to:

J. K. Leichhardt,
Employment Representative

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1100 Superior Ave., Cleve. OH 44114

An Equal Opportunity Employer

WASHINGTON TREE SERVICE, Inc. in Seattle has openings for 2 experienced climbers-trimmers. If you have background and experience to do quality work and are a sober, responsible person, this could be the opportunity you have been seeking. Year 'round job, excellent benefits including profit sharing plan. Relocation allowance to qualified persons. Write or phone: Lou Vaughn, Washington Tree Service, Inc., 20057 Ballinger Road, N.E., Seattle, Washington 98155. Phone 206 362-9100.

MANAGER WANTED. Line Clearance Operation. 10 to 15 crews. Candidate must be experienced as Manager for recognized line clearance company. Must be willing to move to southeastern state. All inquiries kept in strictest confidence. Send resume c/o Vern Milhoan, Nelson Tree Service, Inc., 810 N. Avenue, Dayton, Ohio 45406.

DISTRIBUTORS for D. J. Andrews, Inc. stump cutter teeth, pockets and bolts. Best wholesale and retail price in U.S.A. Add to this exclusive area, local advertising at our expense, etc., and you have our story. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230, or 716 436-1515.

INSTRUCTOR for established Turfgrass Management Program to join three other individuals in department. Applicant should possess desire to teach and willingness to maintain field plots and laboratory equipment. Desired background includes an Associate Degre or higher with minimum of two years practical experience. Send resume to: B. E. Littlefield, Catawba Valley Technical Institute, Highway 64-70, Hickory, North Carolina 28601.

LANDSCAPE FOREMAN — experienced in landscaping, horticulture and hydroseeding — mulching. All replies in strict confidence. Full handwritten resume with first reply. Salary open. Papp Landscaping, Box 20284, Billings, Montana 59102. Phone Area Code 406 656-5610.

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SOD QUALITY MERION SEED for discriminating growers. Also Fylking, Delta, Park, Newport, Nugget and Pennstar bluegrasses as well as fine fescues. We will custom mix to your specifications. Michigan State Seed Company, Grand Ledge, Michigan 48837. Phone 517 627-2164.

CROWNVETCH SEED: Penngift and Chemung varieties. Direct all inquiries to: Walter C. Mehlenbacher, Castile, New York 14427. Phone 716 493-2553.

ALL VARIETIES, straight or mixed to specifications, bluegrasses, fescues, bents, others. Markell Seeds, P.O. Box 3397, Green Bay, Wisconsin 54303. Phone 414 437-0851.

FOR SALE

CHAIN SAW CHAIN, bars, sprockets, sharpening equipment, saw parts and accessories. Save to 40%. Professional quality, fully guaranteed. World's largest mail order supplier of this equipment. Free catalog. Write Zip-Penn, Box 43073-A68, Middletown, Ky. 40243.

DOUBLE EDGE sod cutter blades. Will fit any Ryan sod cutter. Works like double edge razor blade. Cuts much more sod per blade. Made to bolt on both ways. $24.00 plus postage. New automatic sod loaders for direct loading to pallets, trucks or trailers. No workers needed on ground. Both products developed and designed by Hadfield. Write or call Glen Hadfield, 4643 Sherwood, Oxford, Michigan 48051. Phone 313 628-2000.

GOLD COURSE GREEN DESIGNS including specifications, irrigation and drain tile layout, $35.00 each. For more information, write Golf Course Specialty, 330 Cicero Ave., San Antonio, Texas 78218.

ARPS stump cutter teeth, top quality and best price in U.S.A., D. J. Andrews, Inc., 17 Silver St., Rochester, New York 14611. Call 716 235-1230.

MISCELLANEOUS

TREE APPRAISALS, SURVEYS, loss evaluations and expert consultation services. For names of members of the American Society of Consulting Arborists, Inc., throughout the country, contact: Executive Director ASCA, 12 Lakeview Ave., Milltown, New Jersey 08850.

USED EQUIPMENT

RECONDITIONED brush chippers, sprayers, log splitters, stump routers, bucket trucks. Let us know your needs. Equipment Sales Company, 5620 Old Sunrise Highway, Massapequa, New York 11758. Phone 516 799-7619.

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trimmings

GYPSY MOTH is holding true to its roving ancestry. The pest has now been found for the first time in Georgia, says USDA officials. They also report increasing numbers of the beast in Michigan and Virginia. Seems as if the American tourist has helped the gypsy moth in its travels. The Georgia find was located in a campground near Atlanta.

SOY BEVERAGES may be coming on strong in the future. Soybeans as a source of protein and fat for beverages holds real possibilities. In a process developed by Gus C. Mustakas of the agricultural research service, concentrated soybeans retained 94 percent of the protein and 85 percent of the oil. The fat-protein concentrate produced by the process reconstitutes in water to a smooth, light-colored bland base. A wide variety of high-quality beverages or formulated foods can be produced by adding minerals, vitamins and flavor ingredients. The liquid product can be spray-dried to a reconstitutable powder, if desired, for convenience or for reducing shipping costs.

OWNER - MANAGER - EMPLOYERS of firms are also considered "employees" by the Occupational Safety and Health Act. In a ruling coming from the Occupational Safety & Health Review Commission, owners who also work as employees are subject to the same restrictions of the law as employees with no ownership. This means, for example, that if you own and operate a one man tree care service you must comply with OSHA the same as if you had 20 employees.

EPA TRAINING PROGRAMS have been funded to the tune of $1.85 million. The programs will be run by the Department of Labor and the Environmental Protection Agency and will be operated in 39 states and Puerto Rico. Areas of training include solid waste, air pollution and pesticides. EPA has identified 2,200 people to be trained, primarily in state and municipal agencies.

LOOKING FOR A PROGRAM on pesticide safety? "Handle Pesticides Safely—Like a Pro!" is a canned program which consists of 38 slides, recorded cassette and script. The slides depict proper handling and safety practices for pesticide applicators. The cost is $14.95 complete from the Department of Communications, National Agricultural Chemicals Association, 1155 — 15th Street, N.W., Washington, D. C. 20005.

TAKE TIME TO MAKE A NOTE is the advice from top managers in the Green Industry. "It's impossible to keep all the details of every job plus the hoard of other important information in your head all the time," says one tree care firm official. "I have a tablet or 3 x 5 inch card ever present to record my thought at the time. It's saved many embarrassing situations later on."

NATIONAL ARBORIST ASSOCIATION officials have a big grin on their faces. If everything goes as planned, the true meaning of Christmas will have greater value in Washington D. C. and the rest of the nation this year. NAA has secured a live Christmas tree for permanent use by the country as the national Christmas tree. It will replace the traditional cut tree donated by states and decorated during the yuletide season. The tree — it's a Blue Spruce located in Pennsylvania by Ray Gustin, Jr. It will be relocated to the Washington ellipse, just behind the White House.

B.G. DAY, owner Sterling Turf Farms, Johnson, Vt. tells us this story about one of his customers: "He was a professional man who had had our sod installed at his home in 1972," says Day. "He came to us and said, 'We wish to add several new rooms to our house. Before we excavate please come and roll up our lawn and store it until we are ready to put it down again.' We solved this one quickly by agreeing to lift the customer's lawn if in satisfactory condition and selling it to another nearby customer. Then we furnished him with a new lawn at the proper time."

RESERVE-A-ROW is one of the cleverest ideas in the business. Wandell's of Urbana, Ill. uses it to merchandise shade trees. Under the purchase arrangements the customer, upon selecting his row of trees, makes a deposit and an annual payment. After selection the row is completely under his control as to time and size at harvest. Wandell's carry on all cultural practices including trimming and pruning to the customer's specifications and harvests when he wishes. What does it cost? The company charges the current price list at the time of purchase plus or minus a price adjustment based on the Cost of Living Index.

fic Instruments Division, Beckman Instruments, Inc., 2500 Harbor Blvd., Fullerton, CA 92634.

Beckman Offers pH Catalogue

A new 28-page catalog describing Beckman Instruments' complete line of eight laboratory pH meters is now available from the company. Detailed specifications, features, applications and ordering information are included.

The fully-illustrated publication also covers a wide range of Beckman pH, reference and Selection® electrodes, as well as accessories for Beckman and other pH meters.

For a copy of Bulletin 7147, "The Beckman pH Catalog," write Technical Information Section, Scienti-

Handy Acreage Calculator

Looking for a quick and easy way to accurately calculate the acreage of weed infestations? A service publication, "Calibration of Herbicide Sprayers," produced by the University of California, Davis, has just the ticket. Robert W. Brazelton, extension agricultural engineer shows how:

1. Multiply the length by the width

   Example: 110 x 85 = 9,350 (in square feet)

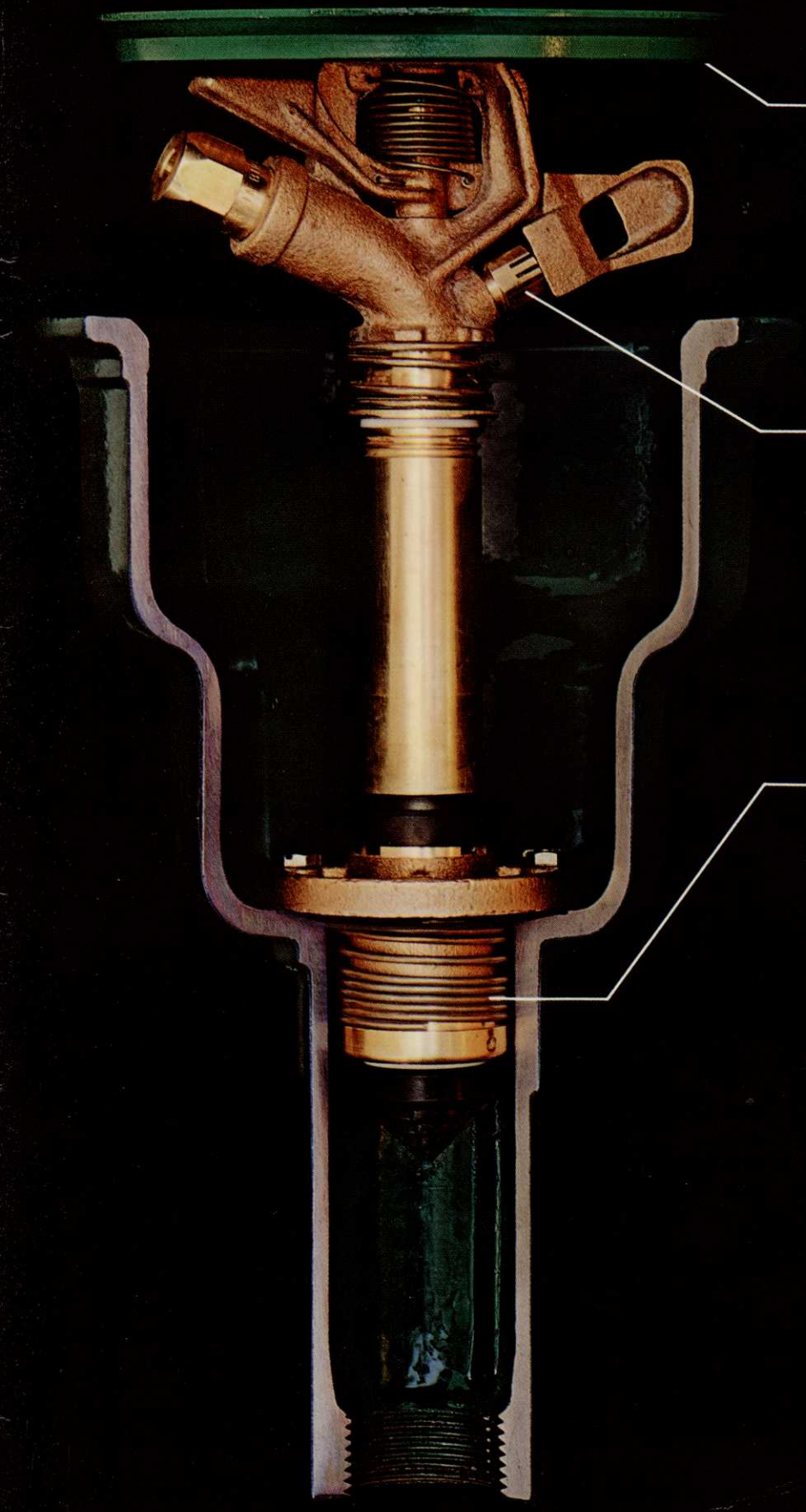
2. Multiply this figure by 23

   Example: 9,350 x 23 = 215,050

3. Point off six decimal places and you've got it — .215 acre. Try it for yourself. It will work every time.

For More Details On Following Page Circle (104) On Reply Card

And the green grass grows all around



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Don't settle for pretty pictures. With Rain Bird at work, you can see all the lush, green grass you like. It grows all around—all around your course.

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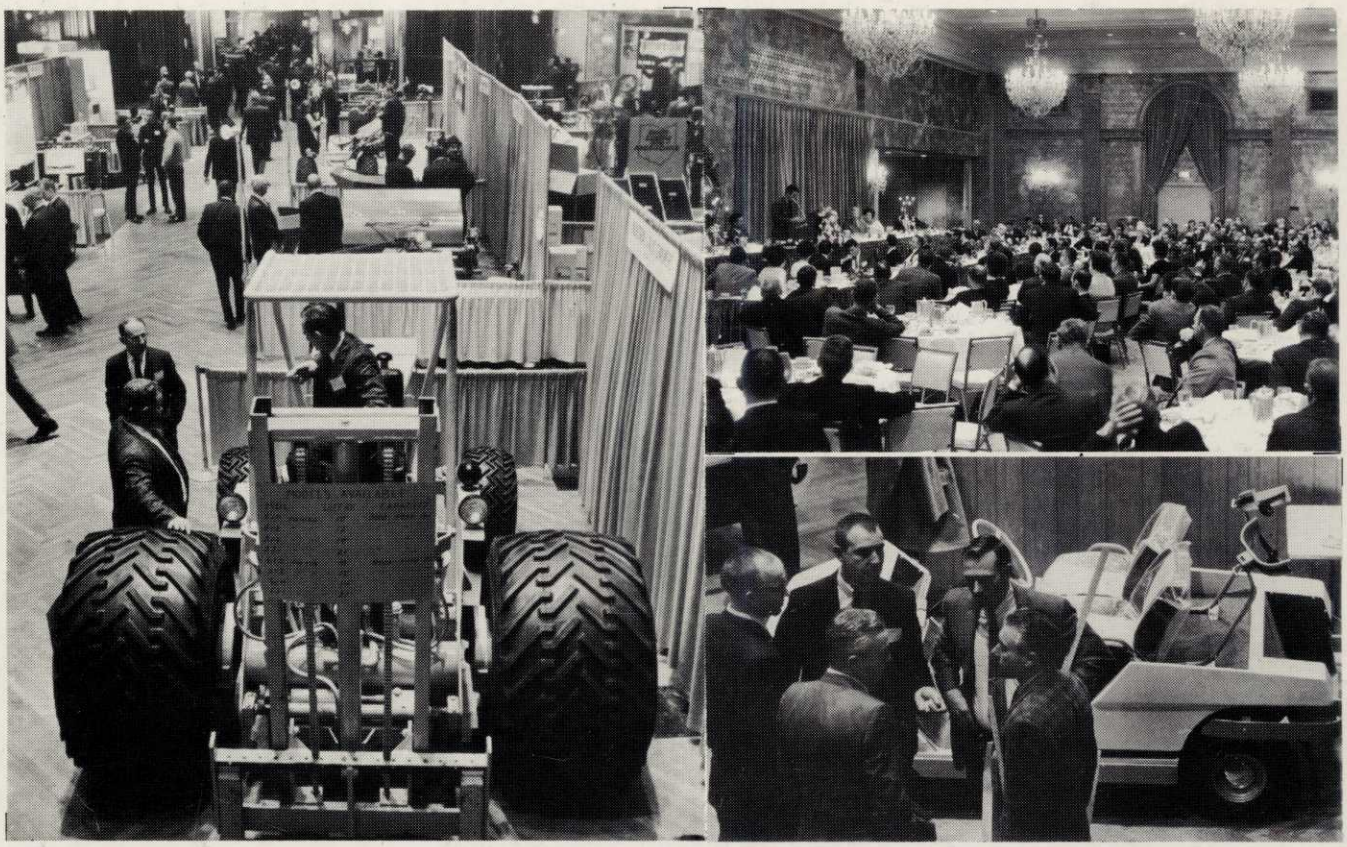

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